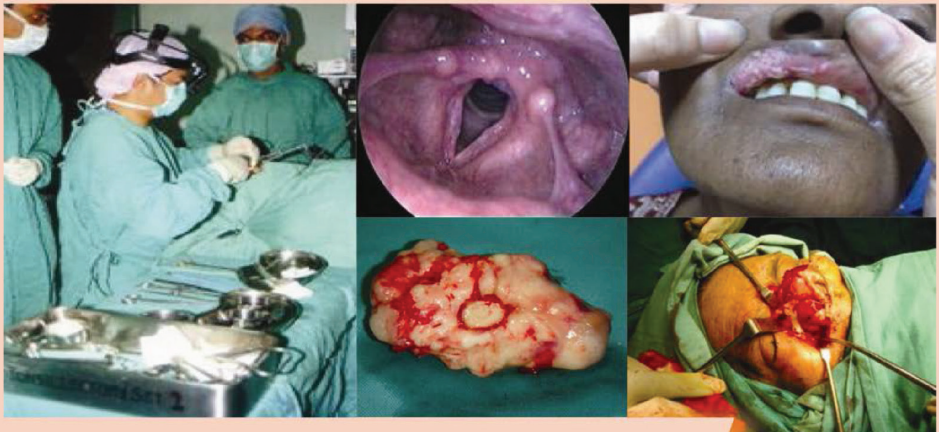
MINISTRY OF HEALTH MALAYSIA



OTORHINOLARYNGOLOGY : PATIENT INFORMATION LEAFLET

Kami Sedia Membantu
KEMENTERIAN KESIHATAN MALAYSIA

Otorhinolaryngology Services
Ministry of Health Malaysia
1st Edition
15 JANUARY 2015

First published in January 2015

www.moh.gov.my

FOREWORD
by Director Medical Development Division
Ministry of Health

Assalammualaikum w.b.t and Salam 1 Malaysia,
Patient satisfaction is multifaceted and a very challenging outcome to define. Patient expectations of care and attitudes greatly contribute to satisfaction and historically, physicians including surgeons, have focused on surgical technique and objective outcomes as measures of "patient satisfaction," while patients place great value on the understanding of surgery to be performed and surgeon-patient interaction. Therefore it is always a priority in the Ministry of Health to ensure patient's need and satisfaction is put forward .

In an international survey by the American publication International Living, Malaysia's healthcare system was ranked third out of 24 countries in its 2014 Global Retirement Index – surpassing other industrialised countries such as Spain, Italy, Ireland and New Zealand.

The index, which was released by the Baltimore-based magazine recently, highly rates Malaysia's healthcare system, which achieved an impressive score of 95 out of a total 100. According to International Living.com's Asia : "Medical expertise of Malaysian healthcare practitioners is equal to or better than what it is in most Western countries".

In our efforts for continuous improvement, the ORL fraternity of the Ministry of Health has taken the initiative to promote informed consent for patients requiring a surgical procedure. Patients are provided with up-to-date evidence-based information, clinical practices on the conditions or diseases they are suffering from, treatment options as well as the details of procedures or surgery and post discharge care.

By having the patients empowered with information and knowledge in a form of patient information leaflets (PIL), the consent and perioperative counseling will be smooth sailing. Any legal repercussions will be dealt with our systematic and precise records keeping.

The PIL were developed to empower the patient with adequate information and knowledge and thereby facilitate the decision-making process. We hope, this shared information between the patient and the healthcare provider will result in appropriate expectations, reduce anxiety, improve compliance and finally improve patient satisfaction.

Congratulations to ORL services MOH for being the first discipline to produce a comprehensive PIL in dual languages for the convenience of our patients and staff.

Dato' Dr Hj Azman bin Hj Abu Bakar
Director of Medical Development Division
Ministry of Health Malaysia

FOREWORD
by Head of Service for ORL

Assalamualaikum dan Salam Sejahtera.
Otolaryngology Services in The Ministry of Health Malaysia is currently serving 37 hospitals with specialists including Sabah and Sarawak. The service has expanded tremendously since its inception in the early days of 1960s and is currently serving the population with both basic ORL and highly skilled Subspecialised Otolaryngology expertise.

Otolaryngology Patient Information Leaflets is one of its latest information product featured by the Ministry of Health for the benefit of the public. It is designed to be shared with patients during the consultation and aim to improve the patient's confidence to self-care and prescriber's communication with the parents.

This leaflet contains general information regarding the surgical procedure in ORL and therefore not intended to replace the advice of a doctor but enough to enable patients to understand the benefits, risk of complications and helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal post- operative recovery.

Thus, Medical Development Division with the expertise and technical support from ORL fraternity Ministry of Health Malaysia, has taken the initiatives towards having standardized, current and evidence-based patient information leaflets to empower patients to undertake wise decision making, with regards to their medical conditions and choice of treatment.

We hope that this Patient information leaflets provide a good opportunity to reinforce the patients' knowledge required for peri-operative counseling and informed consent.

'GAINING KNOWLEDGE IS THE FIRST STEP TO WISDOM, SHARING IT, IS THE FIRST STEP TO HUMANITY '
Our special thanks and gratitude to all members of the Drafting Committee.

Dato' Dr Abdul Majid B. Md. Nasir *Datin Dr Siti Sabzah Mohd Hashim*

CONTENT:

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

TONSILLECTOMY

Introduction

Tonsils are a collection of lymphoid tissue at the back of your throat. Tonsillectomy refers to the surgical removal of this tissue, which may be necessary for a number of reasons.
Tonsils may be removed by a number of methods. These include conventional cold steel dissection, electrocautery, coblation and shavers. Each technique is surgeon and facility dependant.

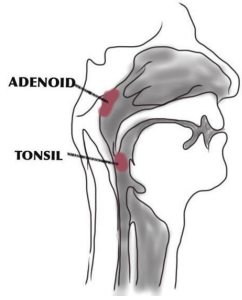


Image 1 : Tonsil anatomy

Indications

- Recurrent episodes of tonsillitis
- Peritonsillar abscess (Quinsy) – an infection of the tonsils which causes severe sore throat, high fever and difficulty swallowing
- Enlarged tonsils that obstruct your airways while sleeping
- Suspected tumour of the tonsil
- Surgical access for another procedure

How is the surgery performed?

Tonsillectomy is performed under general anaesthesia. It is performed through the mouth. It generally takes about 30 to 60 minutes. You may have stitches in your throat which usually dissolves in 3 weeks.

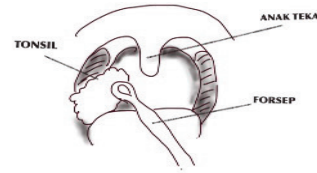


Image 2 : Tonsil surgery

Postoperative Care:

- For the first few days following surgery, pain in the throat is to be expected. This can usually be controlled with pain killers, gargle or throat spray. Fluids and soft diet such as ice cream, pudding and soup is encouraged. However, you should seek medical advice if the pain worsens or is associated with fever
- You should rest after the operation. Strenuous physical activity following surgery is discouraged
- Seek medical advice if you have bleeding, fever, uncontrolled pain or dehydration

Complications

- Bleeding is the most serious complication. It may need surgical intervention
- Infection
- Pain
- Trauma to the mouth, teeth, throat and tongue
- There may be change in voice. This is usually temporary and tends to go away within 6 weeks
- Velopharyngeal Insufficiency (VIP). Reflux of food into the nose during swallowing may occur. If this occurs it is most often temporary, but in extremely rare instances permanent VPI has been reported

What other options are there besides surgery?

Your tonsils may not need removal for recurrent infections if it can be adequately treated with medication.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

ADENOTONSILLECTOMY

Introduction

Tonsils and adenoids are collections of lymphoid tissue at the back of your throat and nose. An operation to remove the tonsils (tonsillectomy) and adenoid (adenoidectomy) may be necessary due to a number of reasons (listed below).
A number of methods exist for their removal including conventional cold steel dissection, electrocautery, coblation and shavers. Each technique is surgeon and facility dependant.

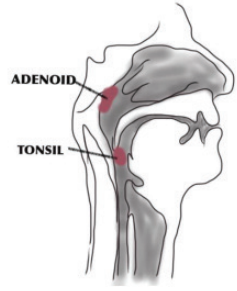


Image 1 : Tonsil anatomy

Indications

- Recurrent episodes of tonsillitis or peritonsillar abscess (Quinsy) – an infection of the tonsils which can cause a severe sore throat, high fever and difficulty swallowing
- Enlarged tonsils and adenoids that obstruct your airways while sleeping
- Suspected tumour of the tonsil
- Surgical access for another procedure

How is the surgery performed?

Adenotonsillectomy is performed under general anaesthesia, so the patient will be asleep throughout the operation. Tonsils and adenoids are removed through the mouth. It generally takes about 30 to 60 minutes. You may have stitches which usually dissolve on their own.

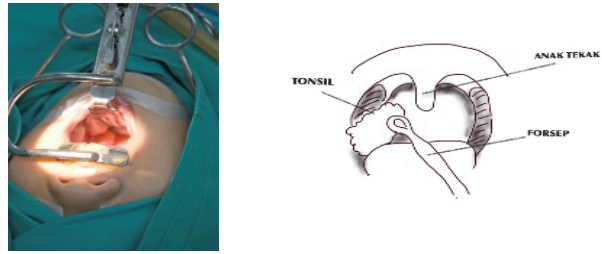


Image 2 : Adenotonsillectomy surgery

Postoperative Care

- For the first few days following surgery, pain in the throat is to be expected. This can usually be controlled with pain killers, gargle or throat spray. Fluids and soft diet such as ice cream, pudding and soup is encouraged. However, you should seek medical advice if the pain worsens or is associated with fever
- You should rest after the operation. Strenuous physical activity following surgery is discouraged
- Seek medical advice if you have bleeding, fever, uncontrolled pain and dehydration

Complications

- Bleeding is the most serious complication. It may need surgical intervention
- Pain
- Infection
- Trauma to the mouth, teeth, throat and tongue
- There may be change in voice. This is usually temporary and tends to go away within 6 weeks
- Velopharyngeal Insufficiency (VIP). Reflux of food into the nose during swallowing may occur. If this occurs it is most often temporary, but in extremely rare instances permanent VPI has been reported

What other options are there besides surgery?

Your tonsils and adenoids may not need removal for recurrent infections if it can be adequately treated with medication

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

TRACHEOSTOMY

Introduction

Tracheostomy refers to placement of a tube through a surgical opening into the wind pipe (trachea). Tracheostomy can be done as an elective or emergency procedure. Emergency tracheostomy is a lifesaving procedure, commonly done when a patient suffers from an upper airway obstruction. Elective tracheostomy is done mainly for prolonged orotracheal intubation.

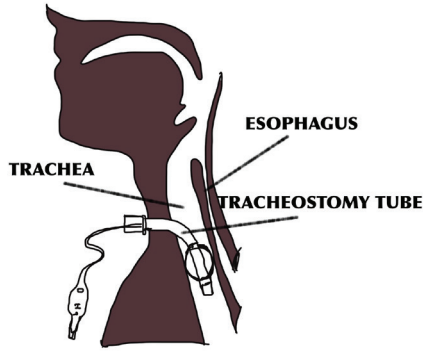


Illustration 1 : Tracheostomy

Indications:

- Assisted ventilation from prolonged orotracheal intubation
- Upper airway obstruction e.g. laryngeal (voice box) tumours
- Electively performed when potential upper airway obstruction may occur postoperatively e.g. following major head and neck surgery
- To facilitate removal of lung secretions (bronchial toilet)
- To reduce dead space (restrictive lung disease)

How is the surgery performed?

Tracheostomy can be performed under general or local anaesthesia. General anaesthesia with an endotracheal tube is preferred. Surgery under local anaesthesia is generally reserved for patients with significant airway compromise or those too ill for general anaesthesia.

An incision is made on the neck. The trachea is opened and a tracheostomy tube is inserted. The skin will be sutured and sometimes the tube is sutured to the neck to prevent accidental dislodgement of the tube. A ribbon is tied around the neck to maintain the position of the tube.

Physiological changes following tracheostomy

Functions of the upper airway include:

- Warming of air
- Humidification of air
- Filtering of air; from dust particles and micro-organisms
- Communication/vocalising
- Swallowing

These functions of the upper airway will be affected following tracheostomy
Postoperative care

- Humidification can be maintained using a tracheostomy mask immediately after the operation. Later, a tracheostomy humidifier can be applied

- The tube is usually changed a week after the surgery. Subsequent changes are done when necessary

- Stoma care. The build-up of mucus and rubbing of the tube can irritate the skin around the stoma. The area should be cleaned at least once a day with normal saline to prevent infection, bad smell and odor

- Immediate postoperative communication. The patient will have problems in speech immediately after the surgery. Alternative methods of communication, such as writing should be made available

- Speaking valves can be used in the short term for the purpose of communication

- Tracheostomy sometimes interferes with swallowing. That requires adjusting to it

- Sometimes food and drink might escape into trachea, causing you to cough when eating. Swallowing therapy can usually overcome this problem. Some patients may require a feeding tube to overcome this problem

Image 1 : Patients with tube tracheostomy

Home care – patients on long term tracheostomy

- The patient can be discharged when his/her caretaker is able to properly look after the tracheostomy tube and the stoma

- In most cases, patients require a suction machine in order to remove secretions

- The caretaker will be properly trained to manage the tracheostomy tube

- Removal of your tracheostomy tube

- THE DECISION TO REMOVE THE TRACHEOSTOMY TUBE IS TO BE DONE BY YOUR ATTENDING DOCTOR.

- Once your condition improves and you no longer require the tracheostomy tube, a number of steps are taken before final removal
- Your tube will be downsized to smaller diameter
- The opening of the tube will be capped of so that you get used to breathing through your nose and mouth
- Once you can tolerate the capped tracheostomy tube, then the tube can be removed
- Daily dressing of the wound will be prescribed until it heals completely
- You may be admitted to the hospital to have this done

Complications

- There can be minimal bleeding which usually stops spontaneously with adequate dressing. If the bleeding continues, the surgeon may need to secure the bleeding surgically
- Tube obstruction can occur. Regular suction of the tube will prevent this complication from occurring
- Tube dislodgement and displacement. The tube must always be anchored securely
- Air may leak into surrounding tissue causing air trapping under the skin
- Pneumothorax occurs when air escapes from the lungs into the chest cavity, causing the lung to collapse. It usually requires a drain inserted into the chest
- The tracheostomy wound may get infected. However, daily dressing of the wound minimizes this complication
- Injury to larynx and food passage (esophagus)
- Thinning of the trachea from the tube rubbing against it (tracheomalacia)
- A tract between the trachea and esophagus (fistula)
- Narrowing of airway above or below the tracheostomy site (stenosis)

Alternative to open tracheostomy

Percutaneous tracheostomy; however certain requirements have to be fulfilled before choosing this alternative.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

WHAT IS EPISTAXIS?

Epistaxis is bleeding from the nose

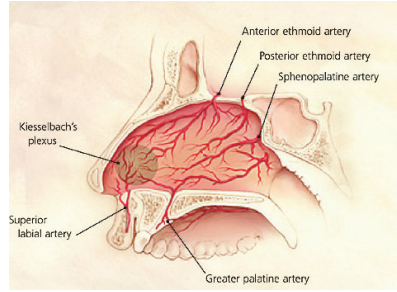


Illustration 1 : Anatomy of nasal blood vesselsvessels

Why does it occur?

It occurs due to several reasons such as:

- Injury to the nose and face caused by falls, sports injuries, motor vehicle accidents and assault
- Minor injury as a result of nose picking
- Infection of the nose and sinuses
- Dengue Hemorrhagic Fever
- Tumour

- Exposure to hot and dry surroundings
- Blood disorders such as Hemophilia, leukemia and Hereditary HemorrhagicTelengectasia
- Blood thinning medication such as aspirin and warfarin
- Uncontrolled high blood pressure

How is nose bleed managed?

Initial treatment at home:

- Keep calm
- Be seated and lean forward
- Pinch the nostrils continuously for 5-10 minutes
- Place ice on the forehead
- Gargle with ice water
- If bleeding continues, please seek treatment at the nearest hospital

Illustration 2 : Immediate treatment for epistaxis

Hospital management

If bleeding continues, the following procedures can be done at a hospital:

- Cautery: To stop a moderate nasal bleed, cauterization may be used. This is either done chemically with “Silver Nitrate” or with an electric diathermy

Image 1 : Epistaxis span

- If bleeding is severe or massive, the nose will be packed with a ribbon gauze or special sponge

- Some of the patients may undergo examination under anaesthesia in the operation theatre to determine the source and to stop the bleeding

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

NECK ABSCESS

Introduction

A neck abscess is a collection of pus from an infection in potential spaces within the structures of the neck.

As the amount of pus increases, the soft tissue spaces expand and push against the structures in the neck, such as the throat, tongue, and, in extreme cases, the trachea (windpipe). As this condition can cause obstruction of the airway, it has to be treated urgently.

Image 1 : Neck abscess

The presenting symptoms are:

- Fever and chills
- Red, swollen, sore throat, sometimes just on one side
- Bulge at the back of the throat

- Tongue pushed back against throat
- Limited mouth opening
- Neck swelling, pain and / or stiffness
- Ear pain
- Voice change
- Difficulty swallowing, talking, and / or breathing

Neck abscesses are classified according to its site of origin:

- Retropharyngeal abscess. An abscess that forms in the tissues at back of the throat
- Peritonsillar abscess (Quinsy). An abscess that forms in the tissue walls beside the tonsils
- Submandibular abscess. An abscess in the floor of the mouth. Pus collects under the tongue, pushing it upwards and towards the back of the throat, which can cause breathing and swallowing problems
- Parapharyngeal abscess. An abscess that forms in the tissue wall beside the throat

Causes of neck abscess

- A neck abscess occurs during or just after an infection in the head or neck such as a cold, tonsillitis, sinus infection, dental infection or otitis media (ear infection)
- As an infection worsens, it can spread down into the deep tissue spaces in the neck or behind the throat
- Sometimes, a neck abscess occurs following an inflammation or infection of a congenital (present at birth) neck mass such as a branchialcyst or thyroglossal duct cyst
- Occasionally it can occur after foreign body ingestion such as a fish bone. Patients with a weak immune system such as those with poorly controlled diabetes mellitus, HIV infection and the elderly have a higher risk to develop this condition

Investigations

After diagnosis has been made by physical examination, these investigations may be performed: blood tests, neck x-ray and CT scan.

Treatment

Treatment may include:

- Intravenous antibiotic. For patients with early and small abscesses, intravenous antibiotic may be sufficient. Failure of antibiotic therapy requires surgical drainage
- Abscess drainage as an emergency is indicated for patients with a life threatening complication such as an abscess causing airway obstruction

Drainage

- The route of the drainage depends on the location of the abscess. Drainage is done either through the mouth or externally, from the neck
- For a peritonsillar abscess, the operation is usually done under local anaesthesia
- The throat is anaesthetized with throat spray and then an incision is made to drain out the pus
- For retropharyngeal, submandibular and parapharyngeal abscesses, drainage is usually done under general anaesthesia
- In some cases, a tracheostomy may be performed

Post-operative care

- Some patients may require monitoring in the Intensive Care Unit following drainage
- Nasogastric tube may be placed for feeding purposes
- A pain killer may be prescribed
- A drain is usually placed to prevent pus recollection

- The wound may be left open for regular dressing
- The wound may heal with regular dressing. If it does not close, suturing may be necessary

Complications

- Bleeding and haematoma. It may need surgical intervention
- Pain
- Trauma to the mouth, teeth, throat and tongue
- Aspiration of pus into the lungs
- Hypertrophic scar

Alternative to surgical drainage

There is no alternative to surgical drainage once it is indicated as it is potentially a life threatening condition.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

REDUCTION OF NASAL BONE FRACTURE

Introduction

Nasal bone fractures are among the most common facial bone fractures. The usual causes are motor vehicle accident, falls and sport injuries. History usually includes a preexisting trauma, which may be accompanied with epistaxis. Typically, the epistaxis resolves by the time the patient presents. The usual presentation is a swelling over the nasal bridge with an alteration in the appearance or shape of the nose.

Indications

- Traumatic fracture of the nasal bones
- Surgical fractures as part of a procedure to relieve nasal obstruction or airway compromise from deviated nasal bones

Procedure

Reduction of nasal bone fractures can be done under local anaesthesia or general anaesthesia. General anaesthesia is indicated for children or for fractures that have settled (hardened). A local anaesthetic and vasoconstrictor agent is applied with a nasal pack. The local anaesthetic can also be injected to the nasal area if needed

After the anaesthesia has taken effect, the patient is placed in supine or semi recumbent position. The fracture is reduced using special forceps

Image 1 : Nasal bone fracture surgery

Postoperative care

- An external nasal splint is applied after the reduction. The splint will be removed after 5 – 7 days
- The patient will be prescribed pain killers and a nasal decongestant spray. Oral antibiotics may be given

Complications

- Inability to reduce: Fractures that cannot be reduced via closed reduction are candidates for open reduction or open septorhinoplasty
- Septal hematoma (bleeding in the septum) may result in a saddle nose deformity. Once diagnosed, a septal hematoma must be drained immediately with incisions in the septum. Septal splints or intranasal packing may be applied to prevent reaccumulation
- Nasal bleeding. Direct pressure and intranasal packing may be used
- Direct infiltration of local anaesthesia carries the risk of nerve damage causing numbness
- Infection: Placement of intranasal packing may result in infection of the nose and sinuses

Alternatives

Some nasal bone fractures can be left alone if nasal function is not compromised

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

EXCISION OF THE PREAURICULAR SINUS

What is preauricular sinus?

Preauricular sinus is a small natural skin lined tracts that open out onto the skin in front of the ear lobe. It can get clogged and cause infection. You may have a swelling and pain in front of ear lobe, sometimes with pus, or you may have it without given any problems.

Image 1 :Preauricular sinus

Image 2 : Infection at preauricular sinus

Why excision of preauricular sinus should be carried out?

This surgery should be done if there are repeated infections. Sometimes, it must also be done to remove the scars resulting from past infections.

How is this surgery done?

The surgery can be done either under local or general anesthesia. It is important to perform the surgery when the sinus is not infected. The skin then cleaned with anti-septic and draped with sterile cloth. The doctor will identify the sinus opening and sinus passages. Then, incision is made on the skin in front of the ear lobe, including the opening of the sinuses and scars. The sinus opening, sinus tract with surrounding tissue will be removed. Having ascertained the entire sinus tissue was removed and the bleeding has stop, the skin then closed with stitches. Wound dressing and sometimes pressure head bandage is necessary to prevent hematoma

Image 3 : Sinus preauricular surgery

What is the alternative treatment?

You may choose not to undergo this surgery. If there is swelling or infection, treatment with antibiotics is required.However, you may experience prolonged and recurrent symptoms due to infections

What should you expect after the surgery?

The day after the surgery, wound dressing or pressure head bandage will be removed by a doctor or nurse for wound inspection. You should be allowed to go home the day after surgery or on the same day if the surgery is performed as a daycare.

However, doctors have to make sure you have fully recovered from the effects of anesthesia and were able to eat, drink and urinate. It will take more than 4 hours after surgery. You should not drive within 24 hours of surgery. You will be given an appointment date in a week to remove the sutures. There are also situations where the stitches will be dissolved by itself without the need it to be open (absorbable).The doctor will advise accordingly

How long do I have to stay in hospital?

Depending on doctors' decision or your health, this surgery can be performed as daycare surgery where you will be allowed to go home the same day of surgery or otherwise, you need to stay in the ward overnight and discharged the next day

Sick leave

Soon after surgery (2 – 3 days), you should be able to start work / school / college if you are able to. If you need a sick leave, sick leave certificates will be given depends on your occupation as required. You will be given a follow-up appointment date within 1 week to open the sutures

What you need to know and do after discharge?

At home, please ensure your ear and site of the operation is always dry. You will also be supplied with painkillers and sometimes antibiotics. Each patient has various level of pain threshold. Please do not hesitate to take painkillers if needed. Ideally, it is advisable to take pain killers regularly as prescribed for first 24-48hours after surgery and then, can take it once necessary

It is no harm if the surgical wound gets wet during shower three days after surgery. However, after a shower, surgical wound should be dried carefully. You can apply antibiotic ointment on the wound. Avoid sleeping on the operation side until the surgical wound heals

What are the possible risks and complications of surgery?

This is usually a simple surgery and there will be no problems. However, like any other surgical procedure, there are a few risks of complications such as:

- Bleeding
- Hematoma (blood clot in the surgical part)
- Surgical wound infection
- Wound breakdown
- Scar
- Recurrence of the disease

Image 4 : Scar and keloid

Serious risk is rare, including:

Injury to nearby structures such as facial nerves or blood vessels

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

MEATOPLASTY AND CANALPLASTY

What ismeatoplasty / canalplasty and why do you need this surgery?

Meatoplasty and canalplasty is a surgical procedure performed to widen the ear canal. It is performed in cases with narrow ear canal (canal stenosis) to prevent it from easily blocked by ear wax or debris as well as to improve the hearing.

This procedure is also indicated on patients with exostosis (abnormal bony growth) in the ear canal. It may also be necessary to widen the narrow ear canal from birth (congenital) or due to scarring as a result of infection or injury.

Meatoplasty is performed as part of mastoidectomy procedure to facilitate access to the mastoid cavity for inspection and cleansing after the surgery.

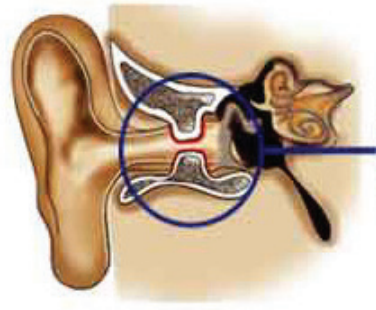


Illustration 1 : Exostosis at the ear canal

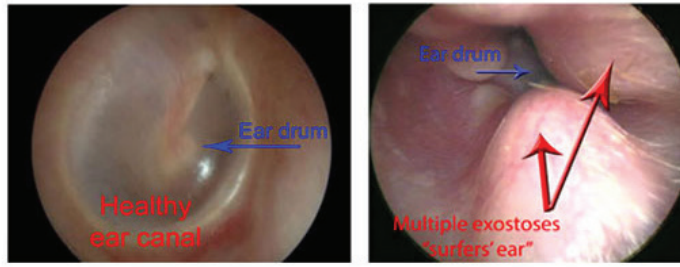


Image 1 : Normal ear image and exostosis

What is an alternative treatment other than surgery?

You have a choice not to undergo this surgery, however, the ear wax and debris will accumulate in the ear canal causing ear pain, blockage and hearing loss as well as potential for infection. Therefore, you must undergo regular ear toilette and cleaning at ORL clinic.

Preparation before surgery

A hearing test should be performed prior to surgery. If you have been prescribed with ear drops, continue to use it while waiting for the day of surgery unless directed by the doctor otherwise.

How the surgery performed?

Surgery is usually done under general anesthesia. The anaesthetist will review the patient one day prior to the surgery to explain the procedure and complications of the anaesthesia. Surgery is performed using micro instruments under the microscope.

What is an alternative treatment other than surgery?

You have a choice not to undergo this surgery, however, the ear wax and debris will accumulate in the ear canal causing ear pain, blockage and hearing loss as well as potential for infection. Therefore, you must undergo regular ear toilette and cleaning at ORL clinic.

Preparation before surgery

A hearing test should be performed prior to surgery. If you have been prescribed with ear drops, continue to use it while waiting for the day of surgery unless directed by the doctor otherwise.

How the surgery performed?

Surgery is usually done under general anesthesia. The anaesthetist will review the patient one day prior to the surgery to explain the procedure and complications of the anaesthesia. Surgery is performed using micro instruments under the microscope.

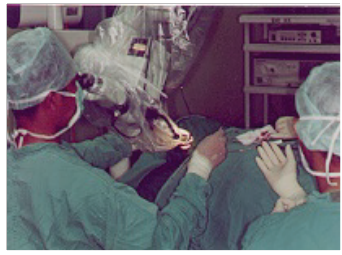


Image 2 : Microscopic surgery

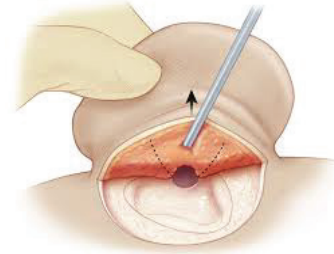


Illustration 2 : Incision behind the ear

Doctor will make an incision on the skin behind the ear lobe. The bony growth (exostosis) in the ear canal would be removed using special burrs and drilling equipment's. Skin grafts may be taken from the arm to line the ear canal bone.

For meatoplasty procedure, the ear canal opening (external auditory meatus) is enlarged by cutting the skin and removes some of the cartilage in the ear lobe. Then, reconstruction is done and produce larger opening to the ear canal or mastoid cavity

At the end of surgery, the ear canal will be packed with medicated ribbon Gauze (BIPP,or other materials). The surgical wound will be closed with sutures and covered by dressing after the wound been protected by antibiotic ointment.

Finally, a cotton wool placed on the ear pack and a compression bandage (head bandage) applied around the head. Usually, the surgery will take about two hours.

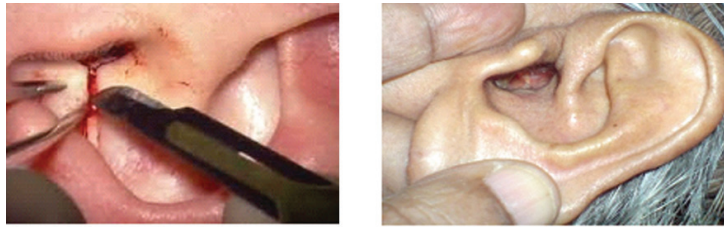


Image 3 : Meatoplasty surgery

What is the post-operative care?

When you return to the ward after the surgery, you will still feel sleepy or groggy. Blood pressure and pulse will be monitored periodically until stable. You will only be allowed to eat or drink after fully recovered from the effects of anesthesia, which is usually 4 hours after surgery.). Anesthesia sometimes makes you feel dizzy and nauseous. The doctor may have to give the medicine to reduce it.
You may experience some pain or discomfort in the operated ear and can usually be controlled with painkillers.

After surgery, your ears are usually packed with medicated ribbon gauze or other ear pack. This causes discomfort, ear blockage, hearing loss and sound could be heard echoing (muffled). Ear packed should be kept for about 1-2 weeks and will be removed by a doctor during follow up in clinic.

If there is a surgical wound behind the ear lobe, pressure head bandage usually applied. If you feel it is too tight, the doctor should be notified so that it can be inspected and loosen as necessary. This bandage is kept for 24-48 hours and useful to protect the operated ear, especially when sleeping at night and prevent hematoma (accumulation of blood clots). You may be more comfortable lying supine or on the non-operated side.

Image 4 : Head bandage after surgery

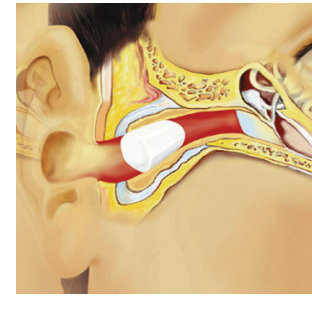


Illustration 3 : Ear pack

A cotton wool on the ear pack outside the ear canal will usually contaminated with blood and secretion. It should be changed at least every day. Please do not remove the ear pack as it to be removed by a doctor. Surgical wound should be cleaned every day. Stitches are usually removed 1 week after surgery during follow up in clinic

How long do I have to stay in hospital?

Depending on the direction of a doctor or your health, patient is usually can be discharged home 2-3 days after surgery or after a head bandage is removed

Sick leave

If you need a sick leave, sick leave certificates will be given up to 2 weeks or until ear pack been removed depends on your occupation. You will be given a follow-up appointment in 1 week to remove the suture and remove ear pack in 1-2 weeks

What you need to know and do after discharge?

At home, please make sure to keep your ears dry at all times. You will also be supplied with painkillers and sometimes antibiotics. Each patient has various thresholds to pain. Please do not hesitate to take painkillers if needed. Ideally, you can take pain killers regularly as prescribed for 24-48 hours after surgery and take it if necessary thereafter.

Ear pack in the ear canalwill usuallymixwith blood stained or yellowish secretion and turns brown colorwithin 1week. It usually smells like antiseptic. Patients do not have to worry because this is common. If you notice yellowish or greenish color fluid and foul smelling ear discharge, it is likely a sign of infection. You need to come to the clinic for further examination.

Please change the cotton wool which protects your ear every time it soiled or at least once a day. It must be done carefully so as not to interfere with ear pack. You may have to do it with the help of a mirror.

You may be allowed to shower and wet your hair3-4 days after surgery. However, the ear canal should be thoroughly dried until otherwise permitted by the doctor. Surgical wound behind the ear lobe may also be wet. After bath, surgical wound should be dried carefully. Then, you can apply a medicated antibiotic ointment on the surgical wound.

You may be allowed to shower and wet your hair the day after surgery; however, the ear canal should be kept dry until otherwise permitted by the doctor. To prevent water from entering the ear during bath, take a lean cotton wool that rubbed with Vaseline and plug it in the ear. Do not push too far into ear canal. After bath, remove the cotton and rinse off any excess Vaseline. Replace it with a clean and dry cotton wool until ear pack is removed.

After the ear pack is removed, you may still find some blood stained discharge from your ear canal. This is a common situation as your ear canal is not completely healed. You can put cotton ball in the outer ear and replace it every morning or evening and more often if necessary. Keep cotton and hands clean while doing it. It takes time for your hearing level back to normal. However, it will depend on the disease itself and the type of surgical procedure performed.

Normally, the ear canal should be packed for 3-6 weeks to avoid it from developing canal re-narrowing. This is common complications that can occur.Avoid swimming or taking part in water sports, outdoor activities until the first follow-up treatment at the clinic or until the ear pack been removed. While sleep, please keep your head up with 2 pillows for few days after surgery. It may help to reduce swelling and pain. Avoid sleeping on the side of the operation. You will find more comfortable if you are lying on your back or on your non operated side.

When do I have to come back to the hospital?

- If a cotton wool in the outer ear canal soaked with blood or fluid until need to be frequently replaced
- Greenish yellowish colored discharge from the ear
- Dizziness and vertigo with nausea and vomiting
- Fever> 38o C, with constant headaches, nausea, vomiting and rapid pulse
- Redness and swelling at the surgical wound
- Poor hearing even after the ear pack is removed. Pain or persistent ear discharge after the ear pack is removed
- Severe and persistent ear ache
- A minimal ear discharge is normal after ear pack is removed, however, profuse discharge is not normal

What is the risk of complications that can occur?

Usually, this surgery has low risk of complication, however, like any other surgical procedure; there is little likelihood of the occurrence of the risk of complications such as:

- Pain - Pain is common after surgery
- Bleeding - usually not serious
- Injury to eardrum
- Infection - Infection of the surgical wound may occur. This will cause pain and inflammation in the area. Occasionally, blood discharge may occur from the surgical wound
- Dizziness, vertigo, nausea and vomiting
- Loss of hearing /worsening of hearing
- Ringing sound in the ear(tinnitus)
- Allergy - an allergic reaction towards ear packing/dressing, where ear lobes become red and swollen. You need to see a doctor for further treatment numbness in the skin around the surgical area. This would last for several months or can be permanent.
- After the surgery, the shape and appearance of your ear may look a little different from the original. This is likely due to swelling after surgery and usually it will recover
- Ear canal may become narrow again
- Facial nerve injury

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

EAR/AURAL POLYPECTOMY

What is ear polyps?

Ear polyp is an abnormal tissue growth in the ear canal. It can arises from the ear canal, eardrum or middle ear. However, it itself is not a cancerous tumor. Usually it is associated with infection of the ear canal, foreign body,cyst, or other tumor that causes polyps. It can also be associated with other ear problems such as cancer or cholesteatoma. Although it's not cancerous, polyps can be dangerous especially when it relates to ear bone infection where aggressive growth is detrimental. The symptoms include hearing loss and purulent or bloody discharge from the ear.

Image 1 : Ear polyp

What is ear polypectomy)?

Ear (aural) polypectomy is a surgery to remove the 'polyps' either from the ear canal, tympanic membrane or middle ear. Having polyps removed, it allows better and further examination of the ear canal.

Why ear polypectomy need to be done?

Surgery to remove a polyp from the ear canal allows the ear canal to be examined in more detail. Furthermore, medicine (ear drop) can be applied more effectively into the ear canal to treat infection and prevent the recurrence of polyps. This surgery may also improve hearing. It also important to determine the type of disease through histopathology examination of the polyps' tissue in the laboratory.

What preparation before surgery?

A hearing test should be performed prior to surgery. If you have been prescribed with ear drops, continue to use it while waiting for the day of surgery unless directed by the doctor otherwise.

How is the surgery performed?

It can be performed under local or general anaesthesia especially in children. The anaesthetist will review the patient one day prior to the surgery to explain the procedure and complications of the anaesthesia. The surgery is performed under the microscope using micro instruments through the ear canal. There is no skin incision needs to be done. Medicated dressing (ribbon gauze or other materials) may be packed into the ear canal to stop the bleeding and promote healing. Polyps' tissue is sent to the laboratory for further histopathology examination. Typically, the surgery takes about an hour.

Image 2 : Microscopic surgery

What alternative treatments other than surgery?

Alternative treatment includes use of steroid that applied to the ear canal through drops or impregnated ribbon gauze (otowick / medicated dressing). It needs to be changed or replaced several times for a certain period of time. Sometimes it also requires antibiotics in the form of ear drops or ointment. However, if this treatment is not successful after few weeks, surgery is necessary or indicated.

What should you expect after the surgery?

If surgery is performed under general anesthesia, upon your return to the ward, you will still feel sleepy or groggy. Blood pressure and pulse will be monitored periodically until stable. You will only be allowed to eat or drink after fully recovered from the effects of anesthesia, which is usually 4 hours after surgery. The ear pack in your ear usually should be left for 1-2 weeks after surgery. The doctor will inform you before you can go home. You may be more comfortable lying on your back or on non-operated side when sleeping.

How long do I have to stay in hospital?

Depending on doctors decision or your health, this surgery can be performed as daycare surgery where you will be allowed to go home the same day of surgery or otherwise, you need to stay in the ward overnight and discharged the next day

Sick leave

Soon after surgery (2-3days), you should be able to start work / school / college if you are able. If you need a sick leave, sick leave certificates will be awarded for up to 1 week or until ear pack removed depending on the nature of your job. You will be given a follow-up appointment date within 1-2weeks to remove the ear packing.

What you need to know and do after discharge?

At home, please make sure to keep your ear dry at all times. You will also be supplied with painkillers and sometimes antibiotics. Each patient has various thresholds to pain. Please do not hesitate to take painkillers if needed. Ideally, you can take pain killers regularly as prescribed for 24-48hours after surgery and take it if necessary thereafter.

After surgery, your ear is usually packed with medicated ribbon gauze or commercially prepared ear pack for 1-2 weeks. It is usually mixed with a little blood stained of reddish and brownish color fluid. Ear pack will make your hearing less and feeling echoed (muffled). It will be removed by the doctor at the time of follow-up in ORL clinic.

After the ear pack is removed, you may still find some blood stained discharge from ear canal. This is a common situation as your ear canal is not completely healed. You can put cotton ball in the outer ear and replace it every morning or evening and more often if necessary. Keep cotton and hands clean while doing it.

You may be allowed to shower and wet your hair the day after surgery; however, the ear canal should be kept dry until otherwise permitted by the doctor. To prevent water from entering the ear during bath, take a clean cotton wool that rubbed with Vaseline and plug it in the ear. Do not push too far into ear canal. After bath, remove the cotton and rinse off any excess Vaseline. Replace it with a clean and dry cotton wool until ear pack is removed. It takes time for your hearing level back to normal. However, it will depend on the disease itself and the type of surgical procedure performed.

What are complications that can occur?

Usually, this surgery is simple and straightforward. However, like any other surgical procedure, there is little likelihood of complications that can occur such as:

- Bleeding
- Infections
- Dizziness and vertigo
- Hearing loss
- Polyps may recur

Serious risk is rare, including:

Injury to nearby structures such as facial nerve or blood vessels

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

MYRINGOTOMY AND GROMMET INSERTION

What is myringotomy and grommet insertion?

In normal circumstances, the middle ear (the cavity behind the eardrum) contains air. This air is necessary to ensure that the hearing mechanism works well and prevent infection. Eustachian tube connects middle ear to the back of the nose helps to maintain balance of air pressure between the two spaces. Any problems or diseases that cause blockage of the eustachian tube will prevent the normal air exchange and produces negative pressure behind the eardrum causing tissue reactions and fluid accumulation in the middle ear space. Diseases of nose or nasopharynx like allergic rhinitis, adenoids hypertrophy, cleft palate, nasopharyngeal carcinoma contribute to the Eustachian tube blockage. Children are more prone to this problem as the Eustachian tube is shorter and more horizontal. The middle ear also contains three ossicles bones that vibrate to amplify sound which is transmitted to the auditory nervous system. Presence of fluid in the middle ear cavity will impair this process and results in hearing loss. This condition is termed 'Otitis media with effusion' (OME). This condition is fluctuating in nature and present with a variety of symptoms and often not diagnosed accurately.This condition can be diagnosed by otoscopic or microscopic examination, tuning fork test, tympanometry and hearing tests.

Myringotomy is a procedure to make an opening with a small incision on the eardrum. The aim is to drain the fluid which may be either serous or mucoid from the middle ear. A 'grommet' is a small tube that is inserted through the opening of the ear drum to restore ventilation of the middle ear. It is usually made of Teflon.

Why do you need this surgery?

This surgery is usually indicated if the condition persists for more than 3months with significant hearing impairment or any abnormality of the ear drum or middle ear. However, special consideration is needed for Down's syndrome and cleft palate patients.

If this condition is not treated it can lead to hearing, speech and learning disability. Long term complications are adhesive otitis media, ossicular chain disruption, retraction pockets and cholesteatoma.

Image 1 : Showing effusion in the right middle

How is the surgery performed?

It can be performed under local or general anaesthesia especially in children. The anaesthetist will review the patient one day prior to the surgery to explain the procedure and complications of the anaesthesia. Microscope and micro instruments are used and it's usually takes about 15-30mins. No skin incision is required. A small incision/nick on the ear drum is made and the fluid is sucked out.

Grommet tube is then inserted through the opening. This tube is as small as the tip of a pen which prevents the closure of the opening made and allows good exchange of air. This temporarily replaces the function of the Eustachian Tube until it recovers.

Adenoidectomy is performed at the same setting if it's enlarged and blocking the Eustachian Tube. Tonsillectomy may be performed in those with frequent tonsillitis.

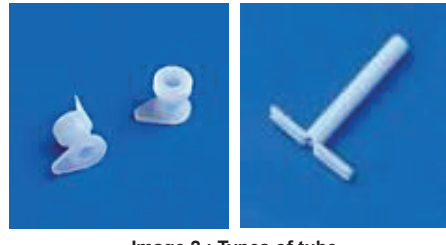


Image 2 : Types of tube

Image 3 : Position of the tube in the eardrum

What alternative treatments other than surgery?

Patients with otitis media with effusion who also suffers from allergic rhinitis or large adenoids, a short duration of treatment (less than 6weeks) with intranasal steroid spray may help in this condition.

What is the rehabilitation after surgery?

When you / your child returns to the ward after the surgery, you / your child will still feel sleepy or groggy. Blood pressure and pulse will be monitored periodically until stable. You / your child will only be allowed to eat or drink after fully recovered from the effects of anesthesia, which is usually 4 hours after surgery. You / your child may experience some pain or discomfort in the operated ear and can usually be controlled with painkillers.

How long do I/my child has to stay in hospital?

Depending on the direction of a doctor or your health, this surgery can be performed as daycare surgery where you will be allowed to go home the same day of surgery or otherwise, you need to stay in the ward overnight and discharged the next day.

Sick leave

Soon after surgery (2-3 days), you / your child should be able to start work/schooling if able to. If you need a sick leave, sick leave certificates will be given depends on your occupation as required. You / your child will usually be given an appointment date for follow-up treatment in 2 weeks.

What you need to know and do after discharge?

At home, please ensure the operated ear is always dry. You will also be supplied with painkillers and sometimes antibiotics. Each patient has various level of pain threshold. Please do not hesitate to take painkillers if needed. Ideally, it is advisable to take pain killers regularly as prescribed for first 24-48hours after surgery and then, can take it once necessary.

It's not uncommon for the patient to have small amount of ear discharge from the operated ear within 24-48hours of surgery. The discharge may be clear or blood stained. If it persists or there is a purulent discharge, it indicates there may be an ear infection. If it accompanied by ear pain and bleeding, you / your child should come back to the ORL clinic for examination and treatment Patient may experience popping/clicking sound or fell fullness in the ear on the first few days. Patient will also be more sensitive and alert towards surrounding sound which is usually not harmful and will slowly fade off in a few days.

It is important to make sure that the operated ear is always kept dry. Generally, avoid water getting into the operated ears as long as the tube grommet is still in the ear because this will cause pain and ear infections.

You / your child may be allowed to shower with wet hair the day after surgery; however, make sure water does not enter the ear until otherwise permitted by the doctor. To prevent water from entering the ear canal during bath, take a clean cotton ball rubbed with Vaseline and Stuff in the ear canal. Do not push too far into ear canal. After bath, remove cotton and rinse off the excess Vaseline. Finally, replace it with other clean and dry cotton.

Avoid activities such as swimming or water sports for at least 3 weeks or only if it is allowed after advice from doctors. It is important to always wear ear protectors (earplugs) while engaging in these activities. If you / your child was allowed to swim, do not dive or swim on the beach. As long as the tube grommet is still in the ear, it is important to always keep an ear by means of the above. Boarding on an airplane rarely cause pain or discomfort in the operated ear. Grommet tube will allow air to move in and out freely in the middle ear and equalized the pressure at any changes in the aircraft cabin pressure.

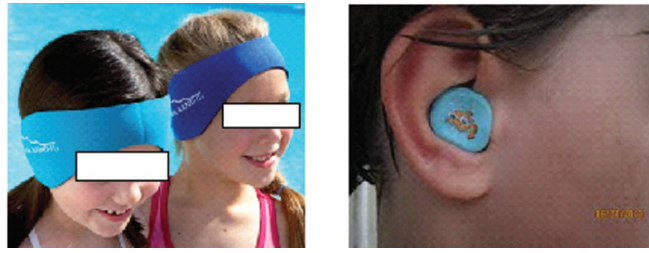


Image 4 : Variety of earplug

Grommet tube will remain in the ear for about 8-12 months, depending on the type of grommet used. Nevertheless, some tubes may dislodge earlier and some later. You / your child may not be aware of it and it does not cause any pain. Some patients may continue to suffer from middle ear infection with persistent ear discharge which may even be minimal blood. In this case, the tube grommet tube shall be removed.

After the grommet tube is out, the eardrum will usually heal on its own. A small proportion of patients (<3%), the hole in the eardrum does not heal and continue to have an infection with recurrent ear discharge.

Does my child need another surgery?

Approximately, 80% of children do not need any further surgery, while the remaining may require surgery for the second time due to recurrent problem.

What are the risks and complications that may occur?

Usually, this is a straightforward surgery; however, like any other surgical procedure, there are little likelihood of the occurrence of the risk of complications such as:

- Dizziness and vertigo
- Persistent ear drum perforation
- Ear infection with purulent discharge
- The ear drum becomes more rigid and thick
- Permanent hearing loss
- Recurrent disease requiring second or subsequent surgeries

Special complications: grommet tube dislodges into the middle ear

Even though this tube is inert and usually doesn't cause any harm if left in the middle ear, it has to be removed to avoid reaction as this is still a foreign body. Depending on the location of dislodgement, it may be a simple or straightforward procedure or could turn out to be a bigger or complex surgery. If removal of the tube is impossible or difficult, the tube can be left in the middle ear, but the patient has to be followed up.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

MYRINGOPLASTY AND TYMPANOPLASTY

Function of the middle-ear

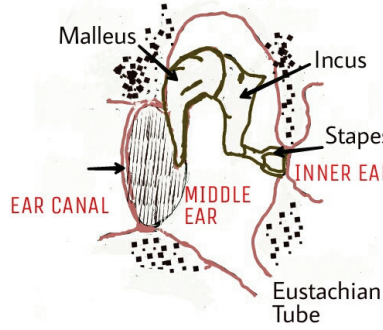


Illustration 1 : Middle-ear anatomy

The middle ear plays an important role in the sound transmission from the outer ear to the inner ear. It amplifies the sound waves which are then converted into electrical impulses in the inner ear.

This function of the middle-ear is disrupted when there is a disease process which affects the middle-ear cavity, the ossicles or the tympanic membrane. This results in conductive hearing loss.

Myringoplasty and Tympanoplasty

Tympanoplasty refers to a range of surgical procedures to eradicate disease from the middle-ear and to reconstruct the hearing mechanism. The procedure is commonly done for chronic otitis media and cholesteatoma

Tympanoplasty is sometimes combined with mastoid surgery for more extensive middle-ear disease

Ossiculoplasty refers to reconstruction of the ossicular chain. This is performed either using remnants of the patient's ossicles or a preformed prosthesis

Myringoplasty, sometimes termed Type I Tympanoplasty refers to closure of a perforated ear drum

Image 1 :Normal ear drum

Image 2 : Perforated ear drum

How is the surgery performed?

Image 3 : Incision above the ear to harvest temporalis fascia

A myringoplasty is usually done under general anaesthesia. The procedure is performed with microsurgical instruments and a microscope.

The perforated ear-drum can be approached directly through the ear canal or via skin incisions behind or in front of the pinna. Tissue graft, usually temporalis fascia, is taken from an incision above the ear. Other tissue graft material sometimes used is perichondrium, fat or cartilage.

Disease of the middle ear is cleared and the ossicular chain is reconstructed as necessary. The defect in the ear drum is then closed with the graft.

The ear canal is packed with medicated gauze to prevent displacement of the graft.

The skin incision is sutured and a compression dressing is placed around the head to prevent hematoma collection. The procedure takes one to two hours.

What are the risks of surgery?

In most surgeries, the procedure is uncomplicated. However, as with any other surgery, there is a small risk of complications such as:

- Facial nerve injury
- Hearing loss
- Bleeding
- Dizziness or vertigo
- Altered taste sensation
- Pain – this usually occurs after surgery
- Wound infection and breakdown. This can cause pain and discharge from the operative site
- Tinnitus
- Allergic reaction to the ear-pack causing pain and swelling of the ear
- Numbness around the operative site. This is usually transient and recovers after a few months

When can I be discharged after surgery?

The dressing is removed the day after surgery and the surgical site inspected. Usually a patient is discharged the following day with painkillers and antibiotics. In some centers, the procedure is done as a daycare procedure and the patient is discharged on the same day of surgery.

How long does it take before I can resume work?

The sutures are removed after a week while the pack is usually kept for 2 weeks. Most patients will be able to return to work after 1 week except patients with certain occupations whichinvolved in lifting, carrying and bending may require additional 1-2 weeks off work

What precautions do I need to take after surgery?

The ear will feel blocked for 2-4 weeks due to the packing material and blood clots. Slight blood-stained discharge may be present for 1-2 weeks. This can be cleared with a cotton ball

There is a risk of graft displacement after the procedure following straining or sneezing. It is best to avoid persons who are having upper respiratory tract infections. Seek medical attention immediately if you do fall sick. Keep your mouth open if you need to cough or sneeze. Avoid strenuous or sporting activity and avoid changes in atmospheric pressure example aeroplane flights

Hair can be washed 48 hours after surgery but the ear canal and incision site must be kept dry. The ear can be kept dry with a cotton ball with Vaseline inserted into the canal

Swimming should be avoided for at least 4 weeks or until permitted by the doctor.

What is the success rate of the procedure?

There are many factors which can affect the outcome of myringoplasty. These include the size of tympanic membrane perforation, site of the perforation and the presence of infection. Revision surgery may be required in some patients.

The conductive deafness usually improves following surgery but in some cases may remain the same or even worsen

What are alternatives to tympanoplasty?

In patients with chronic or repeated middle-ear infection, there is a small risk of infection spreading to the brain causing meningitis or a brain abscess. A perforated ear drum which is dry and not bothersome to the patient can be left alone (periodic follow-up is required). Hearing-aids can be prescribed for hearing loss.

When should I see my surgeon?

Consult your doctor if you have one or more of the following symptoms:

The cotton ball above the pack is constantly wet and requires frequent changing every 15-30 minutes

- Greenish yellow discharge from the ear
- Dizziness or vertigo with nausea and vomiting
- Fever > 38oC, continuous headache
- Reduced hearing, even after the pack is removed
- Continuous ear pain
- Some amount of ear discharge is normal after the pack is removed, but profuse discharge is not

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

MASTOID AND TEMPORAL BONE SURGERY

Introduction:

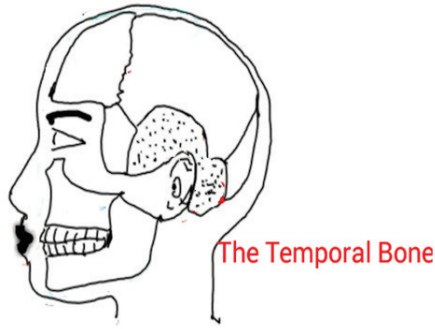


Illustration 1 : Temporal bone anatomy

The temporal bone is the bony part of the cranium which forms a major portion of the ear and its surrounding. It is formed by the fusion of 5 separate bones, the squamous temporal bone, the mastoid process, the tympanic bone, the petrous temporal bone and the styloid process. The mastoid process is a portion of the temporal bone which is located just behind the pinna.

Surgery is performed in this area for ear diseases such as cholesteatoma, tumors and chronic ear infection. Cholesteatoma is a unique disease of the ear which is caused by an ingrowth of skin with surrounding inflammatory tissue. This sac gradually erodes the surrounding bone and damages the surrounding structures. The diseased ear easily becomes infected and these results in a characteristic foul smelling odour described as a fishy odour. Left untreated, the disease can cause deafness, meningitis, brain abscesses and facial palsy.

Surgery is sometimes performed in this region to access deeper or adjacent structures to the temporal bone such as the cochlea, the facial nerve, the endolymphatic duct or the cerebellopontine angle.

How is the surgery performed?

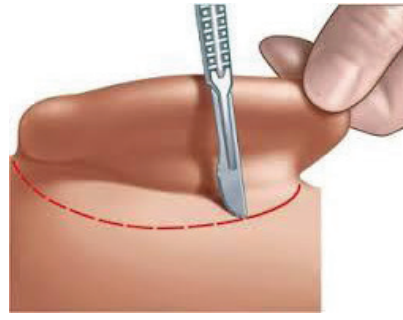


Illustration 1 : Temporal bone anatomy

The common temporal bone surgeries are cortical mastoidectomy and modified radical mastoidectomy sometimes called open cavity surgery. The surgery is performed under general anaesthesia. Hair around the incision area is usually shaved. An incision is made on the skin, usually behind the ear. The bone below the skin is gradually drilled away until disease is removed or the relevant structures identified.

In an open mastoid cavity, a medicated pack is usually inserted and kept for 2 weeks. A cotton ball is placed above this pack. After completion of surgery, the incision is sutured and a compression dressing is placed to prevent hematoma formation. The procedure takes between 2 to 4 hours.

Image 1 : Head dressing to prevent hematoma

When can I be discharged after surgery?

The dressing is removed the day after surgery and the surgical site inspected. Usually a patient is discharged one to two days after surgery with painkillers and antibiotics

What are the risks of surgery?

In most surgeries, the procedure is uncomplicated. However, as with any other surgery, there is a small risk of complications such as:

- Facial nerve injury
- Hearing loss
- Bleeding
- Dizziness or vertigo
- Altered taste sensation
- Pain – this usually occurs after surgery
- Wound infection and breakdown. This can cause pain and discharge from the operative site
- Tinnitus
- Allergic reaction to the ear-pack causing pain and swelling of the ear
- Numbness around the operative site. This is usually transient and recovers after a few months

What can I expect after surgery and how long does it take before I can resume work?

The sutures are removed after a week while the pack is usually kept for 2 weeks. Most patients will be able to return to work after this period

The ear will feel blocked for 2-4 weeks due to the packing material and blood clots. Slight blood-stained discharge may be present for 1-2 weeks. This can be cleared with a cotton ball

Hair can be washed 48 hours after surgery but the ear canal and incision site must be kept dry to prevent infection. The ear can be kept dry with a cotton ball with Vaseline inserted into the canal

Mastoid cavities may take weeks to months to completely dry. Patients will require regular follow-up during this time

Revision surgeries are sometimes required for recurrent disease or chronic discharging ears. Patients require long term follow-up for surveillance of recurrence

What are alternatives to mastoid or temporal bone surgery?

The alternatives very much depend on the underlying disease. For some patients with limited cholesteatoma, regular follow-up and toileting of the ears may be an option. Certain tumors may respond to chemotherapy or radiotherapy. Kindly refer to your physician for more information.

When should I see my surgeon?

Consult your doctor if you have one or more of the following symptoms:

- The cotton ball above the pack is constantly wet and requires frequent
  - changing every 15-30 minutes
- Greenish yellow discharge from the ear
- Dizzines or vertigo with nausea and vomiting
- Fever > 38oC, continous headache
- Reduced hearing, even after the pack is removed
- Continuous ear pain
- Some amount of ear discharge is normal after the pack is removed, but profuse discharge is not
- Altered consciousness

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgicalprocedure, please discuss with the doctor concerned.

BONE ANCHORED HEARING AID (BAHA)

- Surgery For Conductive Hearing Loss

Introduction

Hearing is one of mankind's 5 primary senses; the others being sight, smell, taste and sensation. The organs of hearing are formed during intrauterine development. A newborn baby is fully able to appreciate sound.

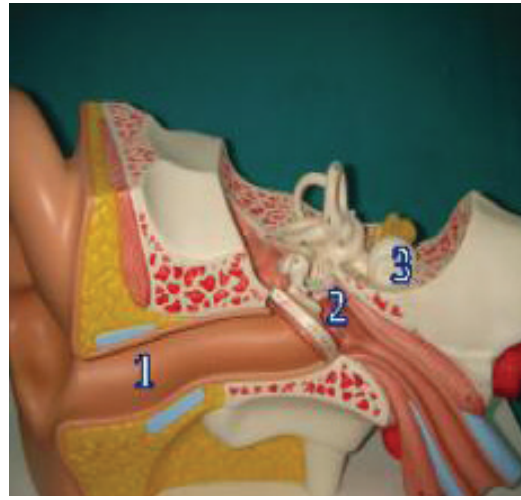


Image 1 : Ear anatomy

The ear is divided into 3 parts; the external ear (1), the middle ear (2) and the internal ear (3). The function of the external and middle ear is to locate, channel and amplify the sound that reaches the inner ear. The cochlea part of the inner ear converts the sound waves into electrical impulses which is transmitted to the brain by the cochlear nerve.

Conductive Hearing Loss

Conductive hearing loss occurs when there is either a malformation or disease to the external or middle ear which prevents sound waves from reaching the inner ear.

What is a bone anchored hearing aid?

A bone anchored hearing aid is a medical device which is surgically implanted into the bone behind the ear. The device transmits sound vibrations directly to the bone which is in turn directly transmitted to the cochlea; thus bypassing the external and middle ear conductive mechanisms. It consists of two parts; one which is implanted into the bone and an external speech processor worn behind the ear.

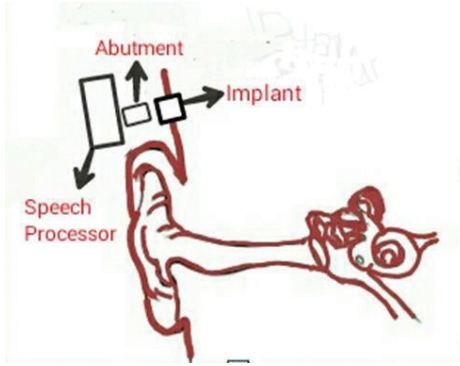


Illustration 1 : Sound is transmitted directly to the inner-ear

There are 2 types of bone anchored hearing aid systems. In the first type a titanium screw is surgically implanted into the bone. An abutment, which protrudes through the skin, is attached to the screw. The processor is then attached to the abutment when the patient wants to use the hearing aid. The minimum age for surgery is 5 years for adequate thickness of the bone.

Image 1 : Trancutaneous abutment

Image 2 : Sound processor attached the abutment

The second type of bone conduction implant consists of an active implant which is placed into a well drilled in the bone. The skin incision is closed completely. The implant contains a magnet which holds the external processor in place.

Image 3 :Internal bone conduction implant

Image 4 : External audio processor

Who will benefit from a bone anchored hearing aid?

- Patients with conductive hearing loss from conditions such as congenital malformations or chronically discharging ears
- Patients with single sided deafness

How is the surgery performed?

The surgery is generally performed under general anaesthesia. An incision is made behind the ear. The implant is drilled into the bone or placed in a well depending on the type of device used. The skin incision is then closed around the abutment or closed completely. A compression dressing is placed over the site of surgery.

When can I be discharged after surgery?

The dressing is removed the day after surgery and the surgical site inspected. Usually a patient is discharged the following day with painkillers and antibiotics.

Is the surgery safe?

The surgery is safe, if performed by those who are trained. Uncommon complications including meningitis, dizziness, injury to the facial nerve and bleeding.

Are there any precautions to be taken after the surgery?

As the processor is worn externally, care must be taken to prevent damage to the device from trauma or external physical forces. For patients implanted with the transcutaneous abutment, meticulous care is required daily to keep the abutment site clean as there is a risk of wound infection or overgrowth of skin, covering the abutment.

Will a patient who has received an implant be able to use it immediately?

After the implant, a period of one to two weeks is required for the incision site to heal adequately. The implant is switched on 2 – 4 weeks after the surgery.

What are alternatives to a bone anchored hearing aid?

A bone conduction hearing aid or middle ear implant may be considered for some patients. For more information kindly consult your audiologist or physician.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

COCHLEAR IMPLANT

- Surgery For Sensorineural Hearing Loss

Introduction

Hearing is one of mankind's 5 primary senses; the others being sight, smell, taste and sensation. The organs of hearing are formed during intrauterine development. A newborn baby is fully able to appreciate sound.

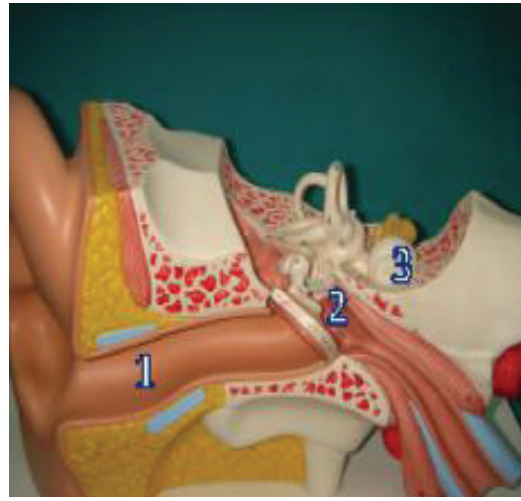


Image 1 : Ear anatomy

The ear is divided into 3 parts; the external ear (1), the middle ear (2) and the internal ear (3). The function of the external and middle ear is to locate, channel and amplify the sound that reaches the inner ear. The cochlea part of the inner ear converts the sound waves into electrical impulses which are transmitted to the brain by the cochlear nerve.

Hearing Impairment

Hearing impairment can be divided into mild, moderate, severe and profound. There are 2 types of hearing impairment:

- Conductive Deafness – due to disease in the external or middle ear
- Sensorineural Deafness – due to disease of the cochlear or cochlear nerve

What is a cochlear implant?

A cochlear implant is an electronic medical device to provide or restore hearing to patients with severe to profound sensorineural hearing loss.

Image 2 : External speech processor

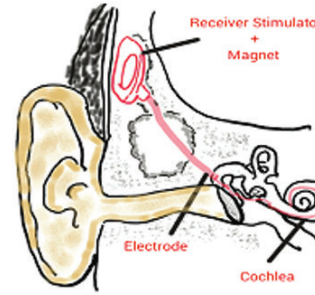


Illustration 1 : Implant

The device consists of 2 parts; an internal part which is surgically implanted; and an external speech processor which is worn behind the ears.

Who will benefit from a cochlear implant?

- Children born with severe to profound sensorineural hearing loss (congenital), below the age of 4
- Patients at any age with speech who lose their hearing secondary to post intracranial insults such as meningitis, trauma, tumour and surgery or from drugs which damage the cochlea (ototoxic).

How is the surgery perfomed?

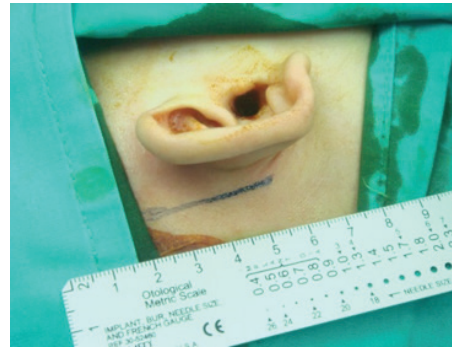


Image 2 : External speech processor

The surgery is performed under general anaesthesia. An incision is made behind the ear. The bone below the skin is drilled in two areas; one to place the receiver stimulator and the other to access the cochlea. The cochlea is drilled open and the electrodes carefully inserted into the cochlea. The incision site is closed with sutures and a compression dressing is placed around the head to prevent hematoma collection. The procedure usually takes 2-3 hours.

What are the complications that may occur?

The surgery is safe, and complications are uncommon. Complications include:

- Injury to the facial nerve
- Meningitis
- Dizziness
- Bleeding
- Numbness around the operative site

When can I be discharged after surgery?

The dressing is removed the day after surgery and the surgical site inspected. Usually a patient is discharged after two days with painkillers and antibiotics.

When will I or my child need to see the doctor again?

Usually a follow-up appointment will be given in 1-2 weeks after the date of surgery. However you are advised to seek medical attention if one or more of the following is present:

- Dizziness or vertigo with nausea and vomiting
- High fever with continuous headache
- Constant ear pain

Will a patient who has received an implant be able hear immediately?

No. The wound takes 1 – 2 weeks to heal. The device is then switched on 2 – 4 weeks after surgery.

After that, an intensive period of habilitation or rehabilitation by the audiologist and speech therapist is required. In children this process takes months to years and requires commitment by the parents or caregivers.

What are alternatives to a cochlear implant?

Those with mild to moderate hearing loss may benefit from a hearing aid. Persons with severe to profound hearing loss who are not suitable candidates or who will not benefit from a cochlear implant will require to learn other modes of communication such as total communication, cued speech, lip reading or sign language.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

AUDITORY BRAINSTEM RESPONSE (ABR)

Introduction

ABR is a test that measures the auditory nerve and auditory brainstem function in response to sound.

This test is typically performed by an audiologist. This test is safe and does not hurt

Indications

- Failed newborn/high risk hearing screening test
- Suspicion of hearing loss that is not confirmed through more conventional hearing tests

Procedure

- In children this test is commonly done under sedation or general anaesthesia
- If the child has a medical condition such as kidney, liver or heart disease, please notify your doctor.
- Once the child is asleep, electrodes will be placed at specific sites on the child's head
- Sound stimulus is then introduced to the test ear and the response is recorded. This procedure usually takes about 30 minutes.

Post procedure

- After the test is completed, the child is then monitored until he/she fully recovers from the medication. The time length for recovery varies as some children take longer than others to become fully alert.
- If the child takes longer time than usual to recover he/she may be admitted for observation
- The child may resume normal activities once fully recovered
- If he or she develops nausea, vomiting, confusion, restlessness or tremors, seek immediate attention at the nearest hospital.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

RHINOPLASTY

Introduction

The shape of the nose is determined by the shape of the underlying bone, cartilage and the overlying skin. Any deformity of these structures will alter the external appearance of the nose.

Rhinoplasty is an operation to improve cosmetic appearance of the nose. The type of rhinoplasty depends on the area of the nose that needs to be corrected. Corrective surgery is done to straighten, to augment, to remove hump or to reshape the tip.

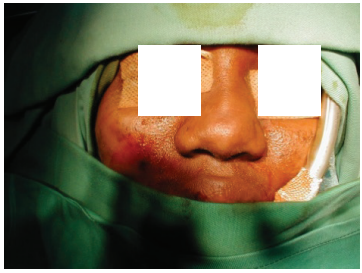


Image 1 : Nose injury due to trauma

Image 2 : After rhinoplasty

Indications

- Cosmetic improvement. This includes alteration of anatomically normal but unappealing nasal appearance, post-traumatic deformities and congenital abnormalities.
- Abnormalities of the nasal pyramid can be classified into different categories which include dorsal deviation, over-projection, under-projection and excessive width.
- Nasal tip anatomy deformities which include deviated tip, hanging tip, bulbous or wide tip and bifid tip.

- Nasal obstruction to improve breathing which can be combined with septoplasty to correct a deviated nasal septum associated with a deviated nasal dorsum. Severe depression of the nasal dorsum can also lead to collapse of the nose, compressing the airway.

- Reconstructive indications relate to rebuilding the nose after severe trauma, cancer ablation or congenital abnormality.

Description of the surgery

Pre operatively, photograph of the patient will be taken for documentation and surgical planning.

Incisions are made inside your nose or a small incision on the skin between the nostril and the base of the nostril. The skin of the nose in lifted off the bone and cartilage underneath. When required, a hairline fracture is made in the nasal bone to allow the surgeon to change the shape of the nose. Pieces of bone and cartilage may be removed or added in reshaping the nose.

A splint, nasal pack or tape may be used to stabilize the nose, facilitate the desired contouring, apply the skin to the underlying framework and limit postoperative swelling and bleeding.

Complications

- Infection of the nose
- Bleeding
- Bruises and swelling
- Complications related to nasal implants e.g. extrusion
- Nasal obstruction
- Permanent numbness to the nose, lip and cheek
- Altered sense of smell
- Eye complications

Postoperative Care Advice

- You should avoid straining, heavy lifting and nose blowing for at least 1-2 weeks after surgery to avoid bleeding
- Blood-stained discharge from the nose is normal for the first few days but profuse bleeding needs urgent attention
- In certain cases, nasal saline irrigation may be done very 2-3 hours after surgery which helps to reduce nasal discomfort
- External nasal splint should be used during sleep to prevent accidental displacement of the reconstructed part of the nose.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

SEPTOPLASTY

Introduction

The nasal septum separates the nose into the right and left nostrils. It is made of cartilage and bone. The septum may be deviated causing considerable blockage, facial pain, epistaxis and sinusitis. sitis. A person may be born with a septal deviation or it could be the result of trauma to the nose. Septoplasty is surgery to straighten the septum.

Why is the procedure performed?

- Crooked, bent, or deformed nasal septum that blocks the airway in your nose
- Uncontrollable epistaxis (nose bleeds)
- Septal perforation
- Pain caused by septal deviation (Sleuder's neuralgia)
- As an access or to give room for other surgery e.g. Endoscopic sinus surgery

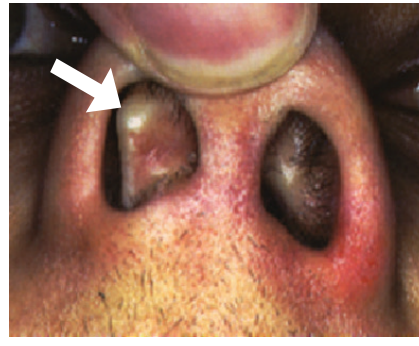


Image 1 : Deviated nasal septum

Description of surgery

Septoplasty is usually performed under general anaesthesia. Surgery takes about 1 to 1 ½ hours. The operation is done within the nose leaving no external scar. The surgeon will remove or reposition any bent cartilage or bone. The correction is held in place by stitches, splints, or packing material. A pack or dressing may be placed in the nose to prevent bleeding.

After Surgery

If the nose is packed, you have to breathe through the mouth. The nasal pack is usually removed 24 to 72 hours after surgery. Bleeding may occur when the packs are removed. However, this will settle quickly. Patients are usually allowed to go home after removal of nasal pack and if there is no further bleeding on removal of the pack. If a splint is placed, it will be removed after a week. Stitches will eventually dissolve. You may get some blood stained discharge from your nose for the first week or two. You also will experience block nose for 7-14 days after surgery.

Complications

- Breathing problem (nasal obstruction)
- Bleeding
- Infection
- Change in the shape of the nose (eg. Saddle nose, depressed tip)
- Decreased sense of smell
- Numbness of the upper gum
- Hole in the septum
- A collection of blood in the created space (septal hematoma)

Post op care advice:

- Regular nasal douching with saline to prevent accumulation of blood clot or crust
- Stay away from dusty and smoky places. Stop smoking!
- Avoid blowing nose for 1-2 weeks. Sneeze with opened mouth
- Avoid strenuous activities for 1-2 weeks

Alternative Treatment

- Decongestant (topical or systematic)
- Splint exterior part of the nose

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

TURBINOPLASTY

Introduction

A turbinate is a curved shelf of bone running along the inside of the nose. The turbinates are covered in tissue lined with mucosa (mucous membrane). They increase the surface area of our nasal lining. This help s to warm, moisten and humidify the air we breathe. There are three turbinates on each side (the superior, middle and inferior turbinates) of the nostrils.

Aim of a turbinate reduction procedure is to reduce the size of the inferior turbinate

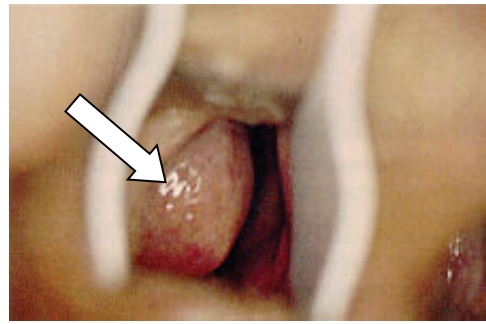


Image 1 : Swollen inferior turbinates

Indication

Enlarged inferior turbinates.

Description of the procedure

The procedure may be done under local or general anaesthesia. The excess turbinate tissue may be reduced or removed using various method and instruments. Among the common methods used are submucous diathermy, coblation, radiofrequency, laser, cold steel instrumentation and microdebrider.

Complications

- Bleeding
- Dry nose
- Drying and crusting of the posterior pharyngeal wall
- Altered sense of smell

Postoperative Care Advice

- You should avoid straining, heavy lifting and nose blowing for at least 1-2 weeks after surgery to avoid bleeding.
- Blood-stained discharge from the nose is normal for the first few days but profuse bleeding needs urgent attention.
- Nasal saline irrigation is to be done every 2-3 hours after surgery and it helps reduce nasal discomfort after surgery
- Cleanse nose with warm water / saline (according to doctors instruction)

Alternatives

- Topical nasal decongestant
- Systemic decongestant eg. Actifed or Clarinase

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

ENDOSCOPIC ANTERIOR SKULL BASE SURGERY

Introduction

Skull base forms the floor of the cranial cavity and the roof of the nasal cavity, separating the brain from other facial structures. It is divided into anterior, middle and posterior parts.

Endoscopic skull base surgery is an operation performed to remove disease that involves the nose and/or sinuses that extend to the skull base and/or brain. It is also done as an access to the brain.

The surgery is performed by a trained otorhinolaryngologist or in collaboration with a neurosurgeon.

Indications

- Disease or tumor of the nose, sinuses extending to the skull base and/or brain
- Repairing or reconstructing defect of the skull base
- As an access to remove brain tumors (eg. pituitary tumor, meningioma, olfactory neuroblastoma)

Image 1 : CT image showing tumor

Description of the operation

- All patients undergoing surgery must have a CT scan and MRI of the paranasal sinuses and brain
- Endoscopic skull base surgery is performed under general anesthesia
- The operation is done with an endoscope through the nose without any external incision. However, in certain cases, external approach may be indicated.
- The procedure is tailored by the extent of the disease.
- In cases where reconstruction is required, graft (material) may be harvested from the thigh or abdomen.
- Dressing and packs may be placed in the nose to stop bleeding and promote healing.

Complications

- Bleeding (intracranial/extracranial)
- Infection/sinusitis
- Cerebrospinal fluid (CSF) leak and meningitis/encephalitis/pneumocephalus
- Eye complications such as protrusion of the eyeball, double vision, impaired vision and loss of sight
- Adhesion or narrowing of the nasal passages
- Injury to the cranial nerves
- Hormonal/metabolic disturbances
- Septal perforation
- Stroke – extremely rare
- Death – extremely rare

Postoperative Care Advice

- Patients should have complete rest in bed until advised by the surgeon.
- If the nose is packed, you have to breathe through the mouth. The nasal pack is usually removed one to five days after surgery. Bleeding may occur when the packs are removed. However, this will settle quickly.
- Nose Blowing and Straining: Patient should avoid straining, heavy lifting and nose blowing for at least 1-2 months after surgery.
- Patients are usually allowed to go home after removal of nasal pack. You may get some blood stained discharge from your nose for the first week or two. You will also experience blocked nose for 7-14 days after surgery.
- Blood-stained discharge from the nose is normal for the first few days but profuse bleeding or watery nasal discharge needs urgent attention.
- Patient should avoid flying, diving or swimming for 1-2 months after surgery.

Alternative treatments

- Radiotherapy/Chemotherapy for malignant or inoperable tumor
- Hormonal therapy for pituitary tumor
- Stereotactic gamma knife surgery
- Stereotactic radiosurgery

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

ENDOSCOPIC DACROCYSTORHINOSTOMY
(EDCR)

What is the lacrimal system?

Tears are produced by the lacrimal gland. They drain via an upper and lower canaliculus (little canals) and into the lacrimal sac. They then flow down the naso-lacrimal duct into the nose. The tear drainage system may get blocked and prevent tears from draining away as they should. When this occurs you may have the following symptoms:

- Excessive tearing
- Sticky discharge and/or recurrent swelling at the inner corner of the eye

Endoscopic DCR is an operation that is performed to re-establish the lacrimal drainage into the nose.

What is the indication for EDCR?

EDCR is performed for obstruction of the lacrimal drainage system.

How is the procedure performed?

- Surgery is performed under general anesthesia
- The operation is done inside the nose without any external incision
- The surgeon will use telescopes and special instruments
- Incision is made inside the nose and lacrimal bone is removed to expose the lacrimal sac. The sac is then incised. The lacrimal drainage system is dilated using a probe. Silastic lacrimal tubes are inserted through the upper and lower puncta and retrieved endonasally.
- The tubes are then secured intranasally. The tube will usually be removed after 4-6 weeks in the clinic.

What are the possible complications of the surgery?

- Bleeding
- Infection
- Cerebrospinal fluid (CSF) leak and meningitis
- Eye complications such as protrusion of the eyeball, double vision, impaired vision and loss of sight
- Adhesion or narrowing of the nasal passages

Post op care advice:

- Regular nasal douching with saline to prevent accumulation of blood clot and to prevent crusting
- Stay away from dusty and smoky places. Stop smoking!
- Avoid blowing nose for 1-2 weeks. Sneeze with opened mouth
- Avoid strenuous activities for 1-2 weeks
- Seek treatment immediately if bleeding excessively

Alternative

- External DCR
- Laser DCR

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

FUNCTIONAL ENDOSCOPIC SINUS SURGERY
(FESS)

Introduction:

Sinuses are air-filled space in our skull which open into the nose. They are the frontal, maxillary, ethmoidal and sphenoidal sinuses.

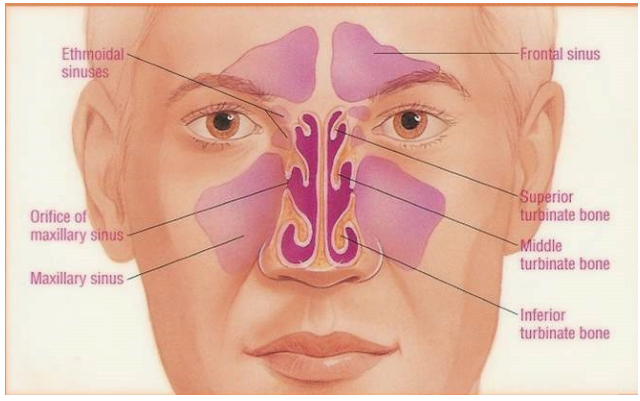


Illustration 1 : Paranasal sinus

Endoscopic sinus surgery is a procedure to treat diseased sinuses and restore their normal function. It also improves the drainage of the sinuses and airflow through the nose. Untreated diseased sinuses can lead to frequent sinusitis causing pain, impaired breathing, foul smelling discharge and altered sense of smell. This surgery is performed after failed medical treatment.

Indications

- Chronic sinusitis
- Recurrent sinusitis
- Nasal polyposis
- Sinus mucoceles

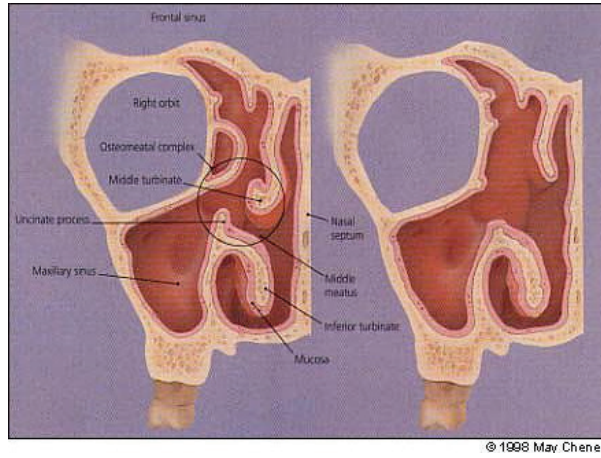


Illustration 2 : Paranasal sinuses

Description of Surgery

- All patient undergoing surgery must have CT scan of the paranasal sinuses.
- Endoscopic sinus surgery is usually performed under general anesthesia.
- The operation is done inside the nose without any external incision.
- The surgeon will use surgical telescopes and special instruments to remove small amount of bone and diseased tissue which obstruct the drainage of the sinuses.
- The extent of the procedure is tailored according to the sinuses involved.
- Dressing and packs may be placed in the nose to stop bleeding and promote healing.

After Surgery

If the nose is packed, you have to breathe through the mouth. The nasal pack is usually removed 24 to 72 hours after surgery. Bleeding may occur when the packs are removed. However, this will settle quickly. Patients usually allowed to go home after removal of nasal pack and when the bleeding has stopped. You may get some blood stained discharge from your nose for the first week or two. You also will experience blocked nose for 7-14 days after surgery.

Complications

- Bleeding
- Infection
- Cerebrospinal fluid (CSF) leak and meningitis
- Eye complications such as protrusion of the eyeball, double vision, impaired vision and loss of sight
- Adhesion or narrowing of the nasal passages
- Death – extremely rare

Postoperative Care Advice

- You should avoid straining, heavy lifting and nose blowing for at least 1-2 weeks after surgery to avoid bleeding.
- Blood-stained discharge from the nose is normal for the first few days but profuse bleeding needs urgent attention.
- Nasal saline irrigation after surgery as instructed by doctor will help clear your nose.

When to consult your doctor?

- High fever
- Constant clear watery discharge from your nose
- Altered vision or swollen eye
- Severe headache and/or neck stiffness
- Profuse nose bleed

If no problem encountered, you should come for follow-up as advised.

Alternative Treatment:

- Intranasal and/or systemic corticosteroids
- Antibiotics
- Antihistamine
- Topical and/or systemic decongestant
- Nasal douching
- Balloon sinoplasty

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

HEAD AND NECK CANCER SURGERY

Introduction

Head and neck cancer may involve the lip, mouth, palate, nose, larynx and pharynx. This also includes the parotid and submandibular salivary glands. Head and neck cancer is dangerous with potential of local and distant metastasis (spread) including liver, lungs or bone. The treatment options are surgery, radiotherapy, chemotherapy or combination of these.

Cheek cancer

Lip cancer

Tongue cancer

Floor of mouth cancer

Gum cancer

Image 1 : Types of cancer

How is the treatment done?

Each individual cancer has its own treatment method base on its location and the stage of the cancer. You can always seek the advice from your doctor for the most suitable treatment for your current illness.

Operation for head and neck cancer

Generally, the operation for head and neck cancer takes a long time and usually involved the dissection of the tumour and neck lymph nodes removal to prevent cancer spread (metastasis). Subsequent reconstructive operation and wound closure after the tumour resection may be required.

Radiotherapy treatment

Radiotherapy will be carried out in radiotherapy treatment centre. This requires the patient to go to the centre every day. The patient will received about 20 to 40 cycles of radiotherapy which approximately takes 2 months, depending on oncologist's advice. This treatment takes about 5 minutes per session. Most patients will experience problem such as dry lips, feeling of thirsth and skin discoloration after radiotherapy.

Chemotherapy Treatment

Chemotherapy will be given through intravenous infusion. Chemotherapy is cytotoxic medication and need to be given over duration of few days. Blood test will be required prior to the treatment to ensure that the patient is well enough to tolerate the therapy. Only those patients who are fit will be given chemotherapy. The patient may require ward admission or can be treated as Daycare, and the treatment is repeated according to the prescribed regime. The patient may experience nausea, vomiting, hair loss, lethargy and fever.

Operation for neck (cervical) lymph node (Neck Dissection)

Image 2 : Neck node

Image 2 : Neck node

Aim of the Operation

To eliminate head and neck cancer spread (metastasis) to various surrounding structures.

How is it Done?

Usually this operation will be done on the same site of neck which primary cancer origins. However, in situation where cancer already /will spread to the opposite site of the neck, bilateral neck dissection is required.

This operation involved removal of lymph node in the neck, along with muscle, vessels and nerves. Postoperatively, vacuum drain will be inserted to the neck and operation site to facilitate draining of residual blood and fluid to prevent hematoma formation. Drain will be removed in few days post operation when drain fluid is reduced in trend.

If necessary the patient may be treated in the Intensive care unit, feeding through nasogastric tube and breathing via a tracheostomy

What are the possible problem /Difficulty after operation?

After the removal of muscle, vesseels and nerves, the patient may experience problem such as facial, neck or lip numbness, difficulty to lift up shoulder, opening door or tying own hair. This problem can be reduced with physiotherapy.

How long do I need to stay in hospital?

The patient may be admitted to ICU (intensive care unit) if the need arises. He/she will be allow home when can perform activity of daily living. The majority of patients will require hospital stay for 1 to 2 weeks.

What are the possible complications?

- Bleeding during or after operation that may require blood transfusion
- Bacterial infection. Antibiotic may be given
- Difficulty in breathing due to swelling or airway obstruction. This may be overcome by the tracheostomy
- If the disease involves nerve such as marginal mandibular nerve which cause lower lip drooping , accessory nerve injury that cause difficulty in shoulder lifting, hypoglossal nerve that cause tongue paralysis, phrenic nerve that cause diaphragm paralysis and so on
- Injury to lymphatic system causing chylous fistula or chyle leak (whitish discharge from the wound). This will be treated with Total Parenteral Nutrition (T.P.N) until the leak stop

- Scarring /Open wound/Failure of graft (skin graft /flap)
- If the disease becomes inoperable, the surgery will be abandoned
- Embolism to the lung, limbs and brain may occur and this will require prolong anticoagulant therapy.

Is there any alternative treatment for head and neck cancer?

As for now, there is no other effective alternative treatment for head and neck cancer.

What is palliative treatment?

Palliative treatment will be offered to patient with incurable disease which includes pain management, nasogastric tube/ gastrostomy feeding, tracheostomy, debulking surgery, localised radiotherapy, chemotherapy and complementary medicine.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

SURGERY FOR SLEEP PROBLEM

What is obstructive sleep apnoea (OSA)?

Obstructive sleep apnoea is a sleep disorder characterized by episodic cessation of breathing resulting in significant reduction in oxygen saturations due to obstruction of the upper airways. If it is not treated, it may lead to multiple medical problems such as hypertension, heart failure, diabetes, stroke and increased incidence of driving and work related accidents. The patient may experience choking sensation and wakes up due to shortness of breath during sleep. They may also suffer from daytime somnolence (feeling of tiredness and sleepiness during the day) and headaches. Some individuals have difficulty in concentration during work or studies.

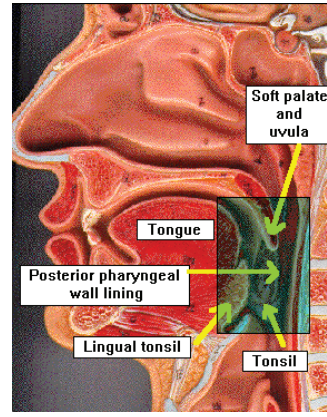


Illustration 1 : Faring anatomy

The gold standard treatment of OSA is healthy lifestyle and continuous positive airway pressure (CPAP)

Surgical intervention is a complementary option.

Image 1 : Sleep test

Operation for narrowed airway passage (OSA)

This Operation aim is to widen the narrow airway passage. Before Operation intervention, sleep study will be done for patient as initial assessment. Patient that experience narrow airway stated above might be advised for such operation. Operation for OSA includes nasal operation such as septoplasty for those with deviated nasal septum, polypectomy for nasal polyps, trimming of inferior turbinate for those with problem of inferior turbinate hypertrophy. Patient with oropharynx narrowing might require operation such as adenoid tonsillectomy, UPPP (Uvulopalatopharyngoplasty), CAPSO (Cauterization assisted palatal stiffening operation) after seek advice from our doctor.

How is the operation done?

This operation can be done with patient awake or under general anaesthesia depending on type of operation needed. Full explanation and information regarding operation needed will be given by doctors before operation consent is obtained. There will be no wound or incision made on the face in most of the situation. Removal of tonsil, adenoid, lingual tonsil usually is needed if it is causing narrowing of airway. Septoplasty, polypectomy or cauterisation of inferior turbinate maybe required if there is a nasal airway passage narrowing.

How long do I need to stay in hospital?

This will depend of the type of surgery done and the patient post-operative recovery. The patient may be admitted to ICU if the need arises.

After 3 to 4 months post operation, patient might need a second sleep study to confirm the efficacy of the operation. The patient may also require to buy CPAP.

What are the possible Complications?

If any of the following complications arises, the patient is advice to seek immediate medical attention:

- Post-operative bleeding
- Infection (fever)
- Painful swallowing
- Trauma to lips, mouth, teeth, tongue and throat
- Naso –pharyngeal regurgitation
- Voice changes (Rhinolaliaaperta / clousa)
- Recurrent pain

Disclaimer :

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

SALIVARY GLAND SURGERY

Salivary gland includes a pair of parotid gland, a pairs of submandibular gland and few thousands of minor salivary glands. Salivary gland operation is needed when there is a salivary gland growth either in the form of benign or malignant lesions, obstruction by stone or stenosis f the salivary duct.

Parotid Gland Operation (Parotidectomy)

What is parotid gland?

Image 1: Parotid gland swelling

Parotid gland is located at the site of cheek. Saliva flows to mouth from parotid gland through parotid duct which opens opposite to the second upper molar tooth. The parotid gland is transverse by facial nerve in the middle and facial nerve is important nerve for facial expression.

How is this operation done?

The operation will be done under general anaesthesia. There is two types of operation: superficial parotidectomy and total parotidectomy. The incision will be made in front of the ear along the side of the cheek and neck. Identification and preservation of facial nerve is to be done cautiously. After the growth is removed, vacuum suction drain will be inserted before wound closure.

Image 2: Parotid gland surgery

How long do I need to stay in hospital?

The inserted drain will be removed 1 to 2 days after operation when there is no sign of further drainage. Patient will be allowed home after recovery. Appointment dates will be given for removing of sutures and review of histopathological report.

Complications

- Bleeding intra operation and post operation, hematoma formation
  Infection
- Facial nerve injury causing paralysis or paresis of nerve
- Frey's syndrome-patient will experience sweating on the cheek during eating
- Ear lobe numbness
- Fistula formation
- Scarring or keloid formation along incision site

Is this operation going to cause any lifelong effect?

This salivary gland removal operation will not affect production and quantity of the saliva produced. There will be no dry mouth as other salivary gland and minor salivary gland will be functioning as normal.

Is there any alternative treatment if I do not want an operation?

Normally, there is no alternative treatment for parotid cancer and benign growth such as pleomorphic adenoma.
Discuss with your doctor to decide on the best option of treatment for your illness.

Submandibular salivary gland removal operation (Submandibulectomy)

What is submandibular gland?

Image 3: Submandibular gland swelling

Submandibular gland is a plum shape salivary gland located below lower jaws on both side. Saliva produced from submandibular gland will flow into mouth through salivary duct which opens under the tongue. This operation is indicated in condition like recurrent infection, stone in salivary gland or growth of submandibular gland.

How is this operation done?

This operation will be done under effect of general anaesthesia. The operation involved incision about 5cm below the jaw line. Submandibular gland will be identified and removed. The marginal mandibular nerve and lingual nerves will be identified intra-operatively and preserved. Haemostasis will be secured and vacuum drain will be inserted before wound closure.

Image 4: Submandibular gland surgery

How long do I need to stay in hospital?

The inserted drain will be removed 1 to 2 days after operation when there is no sign of further drainage. The patient will be allowed home after recovery. Appointment dates will be given for removal of sutures and review of histopathological report.

Complication of operation

- Injury to marginal mandibular nerve-causing lip drooling (transient or permanent) or lower lip weakness
- Injury to hypoglossal nerve-will have effect on tongue movement
- Injury to lingual nerve-patient might experience pain and numbness of tongue
- Bleeding
- Infection

Is this operation going to cause any lifelong effect?

This salivary gland removal operation will not affect production and quantity of the saliva produced. There will be no dry mouth as other salivary gland and minor salivary gland will be functioning as normal.

Disclaimer :

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

LARYNGEAL SURGERY

Introduction

Larynx, also known as voice box is a vital organ in the neck which function is voice production and served as airway passage. Any growth in the vocal cord may cause voice changes and causing airway narrowing. Growth such as vocal nodules, vocal polyps. Intracordal cysts, papilloma need to be removed through Endoscopic LaryngoMicro Surgery (ELMS). Operation for removal of vocal cord such as cordectomy or laryngectomy is indicated if there is laryngeal cancer.

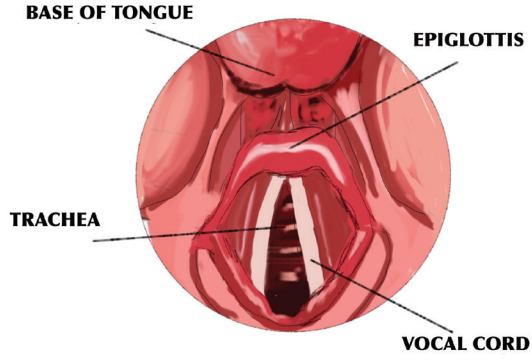


Illustration 1: Larynx anatomy

How is this operation done?

Patient will be under effect of general anaesthesia and growth will be resected based on location of tumour and stage of cancer. Endoscopic Laryngeal MicroSurgery (ELMS) will require microscope and also endoscopic device introduced into the oral cavity.

Small growth on larynx can be removed through this method. For laryngeal cancer patient, major operation will be required such as total laryngectomy.

Patient will be given voice-aid device after operation (Primary TE puncture). After this operation airway will be available as tracheostoma in front of the neck. Meanwhile feeding tube will be inserted to oesophagus for feeding purpose. Vacuum drain will be inserted at the site of the neck and will be removed few days post operation.

Further operation for voice rehabilitation maybe done through ELMS method, where some patient will received treatment such as injection, laryngo-fistula creation, or through Ishiki-Thyroplasty for phonation purpose.

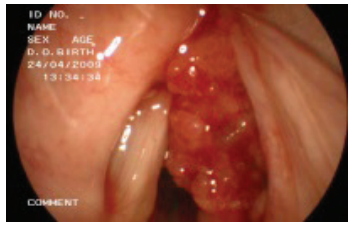


Image 1: Vocal cord cancer

Image 2: After cordectomy

How long do I need to stay in hospital?

Patient will be allowed orally 6 hour after operation for ELMS or cordectomy cases.

For laryngectomy patient, ICU care may be required. A nasogastric tube will be inserted for feeding purpose. The drain will be removed 1 to 2 days post operation once there is no sign of further drainage.

The patient will be allowed home after wound heals in around 1 week duration.

The patient will then be taught on stoma care and speech rehabilitation. Usually, Barium swallow test will be done before patient is allow to eat anything through mouth and this will usually will be done 2 weeks after operation. Patient may also require thyroid hormone replacement and calcium supplementation for life.

What are the possible complications?

- Bleeding intra operative and post operation
- Infection
- Painful swallowing
- Trauma to mouth, teeth, tongue, buccal mucosa or throat
- Voice changes
- Muscle stiffness and numbness due to reduced calcium level
- Difficulty in breathing due to air embolism or pneumothorax Chyle leak
- Wound Breakdown
- Stoma Stenosis
- Disease recurrence e.g. stomal recurrence

Post Operative rehabilitation

The patient who had undergone total laryngectomy, he/she will be taught to use voice rehabilitation devices such as provox, electrolarynx, trachea oesophageal puncture. Patient will also be educated of stoma care from time to time.

Image 3: Electrolarynx

Image 4: Provox

Is there any alternative treatment if I do not want an operation?

Radiotherapy can be given although the best treatment is surgical. The patient can discuss with his/her doctor for the optimum choice of treatment.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

SURGERY FOR SWALLOWING DISORDER

What are the Indications for this operation?

Unable to swallow properly in the condition such as cancer or stenosis. Risk of aspiration (Food or fluid entry into lungs) in patient with stroke or neuromuscular disorder

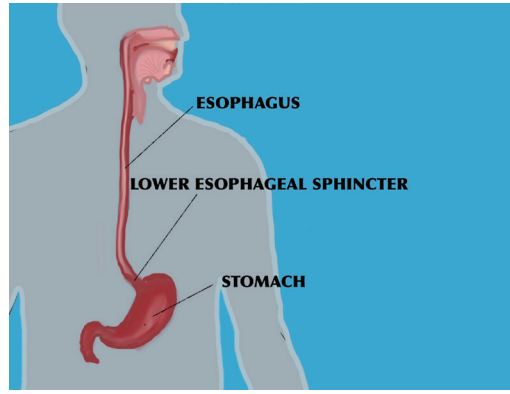


Illustration 1: Esophagus anatomy

What are the Types of Operation available?

- Oesophageal Dilatation
- Insertion of Pharyngeal Tube
- Crico- Pharyngomyotomy

How is the Operation done?

The operation will be done under general anaesthesia.

How long do I need to stay in hospital?

The surgery can be performed as Daycare procedure. The patient will be allowed to go home once fully conscious without any complication.

Patient will be reviewed in 2 week**s.**

What are the possible complications?

- Bleeding
- Oesophageal perforation/rupture
- Infection
- Failure of dilatation procedure. This can be overcome by percutaneous feeding gastrostomy
- Recurrent laryngeal nerve injury causing hoarseness of voice

Is there any other alternative treatment if I do not want an operation?

Patient will need to undergo treatment for speech and swallowing with the speech therapist for a prolong duration.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

FIBEROPTIC ENDOCOPIC EVALUATION FOR SWALLOWING (FEES)

Introduction

FEES is a method for studying swallowing disorders. It has the following advantages; ease of use, very well tolerated and permits bedside assessment.

The examination is usually performed by a Speech Therapist with an ORL Specialist. During the examination, positioning and therapeutic manoeuvres are performed to help establish the required rehalibitation.

Indications

- To study the degree and type of swallowing difficulty
- To assess the best route for feeding
- To determine the type of rehalibitation and assess progress
- For diagnostic purposes

The procedure

Image 1: FEES procedure

The procedure is performed with a fiberopticendocope inserted through the nostrils. It is preferable that a topical anaesthetic is not applied during this examination because it may impair swallowing. However, if you have difficulty tolerating the procedure, the doctor may decide to do so.

Once the larynx (voice box) is visualized, you will be given fluid or food as required by the examination. A non-toxic dye is mixed with the food or fluid for better visualization of the swallowing process.

You will be asked to chew the food and swallow the food or fluid. You might cough during examination. This is due to spillage of food particles or fluid into your breathing passage and you will be advised to cough several times to clear the passage.

During the examination, you may be advised on certain positioning of your head and neck for the purpose of rehabilitation. You will also be advised on certain exercises that will improve your swallowing.

Post procedure care

If you were anaesthetized, you are advised to avoid hot meals and drinks for an hour after the procedure.

Complications

- Sneezing and tearing
- Gagging or vomiting
- Aspiration
- Lung infection due to aspiration
- Fainting due to stimulation of certain nerves
- Nose bleeding
- Mucosal injury with bleeding
- Adverse reactions to topical anaesthetics
- Laryngospasm – sudden tightening of voice box

Alternatives

Video fluoroscopy.The patient swallows food mixed with contrast so that the ingested food bolus can be visualized by radiography. The radiologist takes a video x-ray which captures the food bolus as it moves from the mouth through the throat to the esophagus.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

RECONSTRUCTIVE SURGERY FOR HEAD AND NECK

Introduction

Reconstructive surgery is carried out to repair defects of the skin and tissue which may not heal spontaneously or cannot be closed primarily. This is commonly seen in cancer and trauma patients.

This includes several types of procedures such as skin grafts (split or full thickness), local flaps, pedicle flaps, and free flaps.

Split skin graft (SSG) and full-thickness skin graft (FTSG)

If you have a wound from surgery, or an excision of a lesion, burn or non-healing wound, your doctor may explain that you require a procedure known as a split skin graft (or full thickness) to ensure that it heals.

Skin graft surgery involves the transfer of skin (of varying thickness) from a healthy surface of the body (commonly: thigh, upper arm) to the defect to restore normal skin structure.

Prior to surgery, the skin defect (known as recipient site) must be free from signs of infection, necrotic tissue, and foreign bodies. You may need to undergo multiple dressing sessions and/or debridement until the recipient site is deemed favorable for surgery.

How is the operation performed?

The operation may be performed under general or local anaesthetic which will be discussed with you beforehand by your surgeon and/or anaesthetist.

There are two types of skin graft:

- Split Skin Graft (SSG) involves the transfer of the top layer of skin, usually taken from the thigh or the inner arm, known as the donor site, to the recipient site. This will leave a raw area of skin which will require dressings. SSG may be performed to cover a large surface area of skin defect.

- Full Thickness Skin Graft (FTSG) is similar to the above but involves the transfer of a deeper layer of skin. This wound is normally taken from the neck area, behind the ear or upper arm, depending on where the skin is being moved to. The donor area is then directly closed using dissolvable sutures.

After your surgery:

- Your skin graft (recipient site) will be covered with a padded dressing which may be held in place by stitches. The dressing will be opened for inspection after 5-7days.

- Following a SSG you will have a padded dressing on the donor site unless this dressing becomes soiled it will stay undisturbed for 10-14 day

- Following a FTSG you will have stitches/steri-strips and a light dressing over the donor site. This is usually removed during your first skin graft check at five to seven days then replaced if necessary.

- You will be advised to avoid heavy lifting, bending and strain, and if possible to sleep more upright (not flat) for at least the first 24 to 48 hours. Elevation is very important for the healing of the wound.

- Healing time of skin graft varies from 3 weeks (SSG) to 6 weeks (FTSG), but may be longer depending on various factors.

How long will I be hospitalized?

Hospital stay may vary from 1-5 days after surgery depending on your comorbidities and degree of surgery. You may be given and early clinic follow-up 5-10 days after discharge for wound inspection.

What are the possible risks and complications of skin graft surgery?

- This procedure is relatively safe. However, as in any operation, there are risks and complications such as:

- Bleeding (usually minimal). However, there is a risk of hematoma formation, whereby blood clots accumulate beneath the skin surface. This may require drainage and evacuation of the clots. You are advised to withhold aspirin and other anticoagulants for at least 1-2 weeks prior to surgery.

- Infection - antibiotics are routinely prescribed after operation, however if there is an accumulation of pus, you may require drainage and additional dressing.
- Failure of graft to take. This may occur due to local factors such as shortage of blood supply, radiation, poor immobilization or infection. There are also common systemic factors such as elderly patient, diabetics, poor nutritional status, heart and large vessel disease, cancer, and smoking.
- Delayed wound healing - which may require dressing
- Other complications include scarring, altered skin contour, pigmentation, numbness, pain
- Side effects of anaesthesia must also be discussed with your anaesthetist
- Incidence of any complication that may affect the success of the skin graft, additional procedures may be required as explained above
- Although a good outcome of surgery is anticipated, there is no guarantee of an ideal one

What alternatives do I have?

Some skin defects may heal spontaneously without skin grafts, whereby patient will be on long term dressing until the wound heals by secondary intention.

However, for larger defects, one must understand that healing by secondary intention may fail leading to prolonged healing time, heavy scarring and contracture which may cause limitation of function.

Local Flaps

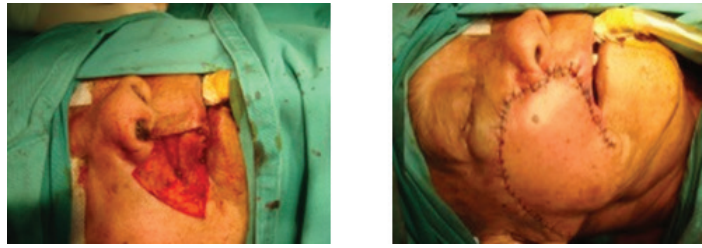


Image 1: Local flaps

Local flaps are shaped form adjacent skin structures. It may consist of cutaneous (skin only), fasciocutaneous (skin and fascia) or myocutaneous (skin and muscle)

In head and neck reconstructive surgery, the design of the flap is of utmost importance especially in the facial region, taking into consideration - cosmetic factors. The method is chosen based on situation.

How is the operation performed?

Either general or local anaesthesia will be given. Reconstruction with local flaps will be done in the same setting as your excisional surgery after removal of swelling/masses.

The flap will be inspected on the next day, stitches will be removed with 5-7 days.

How long will I be hospitalized?

Depending on the degree of surgery, you will be allowed home as early as 2 days after surgery, with follow-up in our clinic 5-7 days after discharge.

What are the possible risks and complications?

- Bleeding. Hematoma (accumulation of blood clots) formation may occur beneath the flap which may or may not require evacuation. You are advised to withold blood thinners, including aspirin, at least 10-14 days prior to surgery.
- Infection. You will routinely be prescribed with antibiotics post-op, however should there be purulent discharge from the wound, drainage and dressing may be needed.
- Failure of flap. The flap will be inspected for viability (color, capillary refill, needle prick bleeding), dusky or blackish appearance may indicate failure of blood supply to the flap due to various local or systemic factors.
- Scarring and keloid formation (low risk)
- Local nerve injury - which may lead to numbness, discomfort, and occasional pain.

What alternatives do I have?

Apart from surgery, you may opt for conservative management whereby allowing the wound to heal by secondary intention. This however, has a large risk of poor wound healing, multiple recurrent infection, extensive scarring and skin contracture.

Pedicle Flap (Myocutaneous and Myofascial Flaps)

Pedicle flap is a type of flap which utilises vascular supply (pedicle) from its initial donor location, transferred to the recipient site to cover the area of skin/mucosa/muscular defect. The common donor is the greater pectoralis muscle of your chest, rectus muscle of abdomen, or latissimus muscle of back. This is a useful method in closing limited-sized thick layered defects after operations such as glossectomy, oropharyngectomy, buccal wide excsions, etc.

Myocutaneous flaps (more commonly used) - comprises of the layer of skin, subcutaneous fat, fascia and muscle; whereas Myofascial flaps comprise of fascia and muscle (without skin).

The advantage of pedicle flaps lie in its ability to provide a large cutaneous island that can be used for defects involving 2 epithelial surfaces. The muscular part covers neck structures protecting the carotid artery, especially in patients who have undergone radiation therapy.

How is the surgery performed?

This procedure is done under general anaesthesia.

The size and location of the skin paddle over the pectoralis major muscle is designed.

Initial incision is made usually above the nipple in the male and below the breast in the female patient. The incision is carried down to the pectoralis major muscle. Skin/fascia tunnel is created under the superficial pectoralis major muscle fascia, preserving the perforators (blood supply). The paddle is passed through the tunnel and sutured at the recipient site. Skin on the chest wall (donor) is mobilized allowing primary closure in most cases (or via SSG if required).

The neck and chest are drained with suction drains, two in each location.

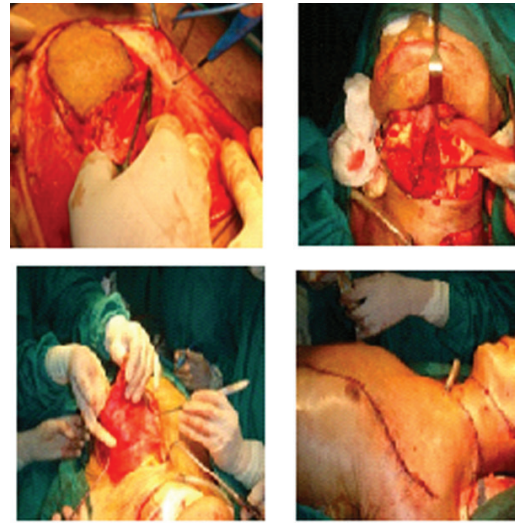


Image 1: Steps of surgery

Post-operative Care

Dressings with antibiotic ointment

Strict Flap Monitoring:

- No tracheotomy ties, gown ties, or pressure on pedicle in neck or over clavicle ("No Pressure" sign taped on patient's chest near pedicle or written with marking pen on skin)
- The flap is monitored by observation of color and needle-prick bleeding. Poor flap appearance may be improved with the use of dextran, steroids, and/or hyperbaric oxygen.

*Flap failure is most likely to occur at the superior aspect of the flap/mucosa closure.

How long will I be hospitalized?

This procedure is commonly performed as part of a major surgery and patient may be hospitalized for more than 7-10 days post-op and may even require initial ICU admission for close monitoring.

What are the possible risks and complications?

- The major complication if failure of flap, especially at its distal end. This may be noticed on inspection where tissue viability is compromised and skin appears dusky/ black.
- The flap can conceal recurrences, making follow-up in the neck area more complicated.
- In women, the flap might include breast tissue, which may lead to breast asymmetry. In males, hirsute chest skin is placed inside the mouth.
- This flap causes loss of pectoralis muscle function in arm adduction and/or rotation.
- In patients who are overweight, the flap is bulky, which leads to postoperative contour deformities.
- Thoracic complications such as hemothorax (bleeding into pleura), pneumothorax (air in pleural space) which may compromise breathing.
- Other general complications include bleeding, infection, and anaesthetic risks.

What alternatives do I have?

Another method of reconstructive surgery which may be considered is free flap. This may be the preferable option for those who are contraindicated to pedicle flaps:

- Heart disease patients (poor vascularisation)
- Post-mastectomy
- Morbid obesity
- Congenital abscence of pectoralis muscle

The extent of coverage and the reach of the flap are dependent on the anatomy of the patient

The best method may be discussed with your ORL surgeon.

Free Flap

A free flap is one way of filling a hole which is left when a cancer has been removed. It is one of the most common ways of replacing tissue in the head and neck, particularly after mouth cancers have been removed. It can be used to replace large parts of the mouth and has the advantage that when it heals it does not shrink so that hopefully speech and swallowing will not be greatly affected.

This procedure requires expertise in microvascular surgical technique. Commonly used is the radial forearm flap.

Free Flap

A free flap is one way of filling a hole which is left when a cancer has been removed. It is one of the most common ways of replacing tissue in the head and neck, particularly after mouth cancers have been removed. It can be used to replace large parts of the mouth and has the advantage that when it heals it does not shrink so that hopefully speech and swallowing will not be greatly affected.

This procedure requires expertise in microvascular surgical technique. Commonly used is the radial forearm flap.

How is the operation performed?

This procedure is done under general anaesthesia.

Your surgeon will take a piece of tissue including skin and blood vessels from the donor site, i.e.: forearm near the wrist.

If cancer is involved it is removed.

An incision is made over the area identified where the flap will be taken from. The flap is dissected and freed from the surrounding tissue.

The blood supply including at least one vein and one artery is dissected. This segment is called the vascular pedicle. The vein and artery are divided, separating the flap from the rest of the body.

Once the flap of skin is raised it is transferred to the head and neck and sewn into the hole created by the removal of your cancer.

The blood vessels supplying and draining the flap are then joined to blood vessels in your neck under a microscope.

Once the flap is removed from your forearm the hole created is covered with a skin graft, placed in a bandage which is removed after around 10 days, along with the stitches.

How long will I be hospitalized?

On average, the hospital stay is 10 days. Patient will be regularly followed up in the outpatient clinic after discharge.

- If this occurs it usually happens within the first two days and means that you will have to return to the operating theatre to have the clot removed. Removing the clot is not always successful and on these occasions the flap 'fails' (necrosis) and an alternative method of reconstruction sought.

- Weakness and numbness. You may also notice that your hand does not feel as strong as it was after the operation and sometimes it will feel colder or numb/tingly. Pain is rare.

- Other complications which may occur with any surgery are also possible including infection, bleeding, anaesthetic risks.

What alternatives do I have?

Another method of reconstructive surgery which may be considered is pedicle flap. Each technique has its own advantages and limitations which may be discussed with your ORL surgeon.

Disclaimer:

- *In general, all surgical procedures have risks of complications despite the best of care and measures taken to prevent it. There is no guarantee that a complication will not occur.*
- *It is not possible for a doctor to explain every possible complication or side-effect in detail especially those which rarely occur. Complications may require additional surgical procedures.*
- *The complications listed in this leaflet are meant to inform you and not to scare you. There is a possibility that you may experience side-effects and complications not mentioned in this leaflet.*
- *Most patients do not experience any complications, but if you have any doubts or queries, please discuss it with your doctor.*
- *If you have any reservations during recovery or any problems after surgery, do not hesitate to seek medical advice.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

IMPACTED EAR WAX

Introduction

What is ear wax?

Ear wax is a naturally occurring substance in our ears. Glands found in the skin of the external ear canal produce thick, sticky yellowish brown material. Naturally, earwax will migrate out of the ear canal by itself.

What is the function of ear wax?

- Trapping dust and prevent it from reaching the eardrum
- Prevent bacterial and viral infections
- Oily characteristic feature serves as a waterproof coating on the skin of the ear canal and prevent the accumulation of water.

What are the problems caused by earwax blockage?

Usually earwax does not cause any problems. However, problems may arise when earwax becomes dense and obstruct the ear canal. Earwax blockage is usually caused by the use of cotton buds and congenital factors such as narrow external ear canal.

The usage of cotton buds cause earwax to be pushed deeper into the ear canal and cause obstruction.

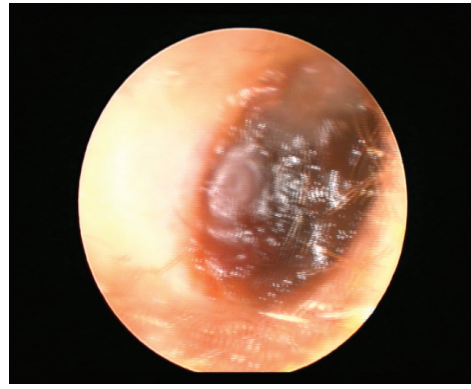


Image 1: Ear wax

What are the symptoms of ear wax blockage?

- Hearing loss
- Ear pain
- Ringing sensation (tinnitus)
- Itchy ears
- Dizziness

What is the treatment for impacted earwax?

- Ear wax can be softened with ear wax softeners
- Removal of earwax by using suction or syringing technique
- In uncooperative or children with special needs, the removal of earwax may require sedation or general anaesthesia.

What are the risks that may occur during syringing?

- Injury to the skin of the ear canal and ear drum
- Dizziness

How to prevent impacted ear wax?

- Avoid the usage of cotton buds
- Clean the external ear with clean soft material

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

REMOVAL OF FOREIGN BODY FROM NASAL CAVITY

Introduction

Foreign body nose is common among children. Among the most common objects found are:

- Organic objects such as, peanut, cotton buds, seeds
- Inorganic, such as button batteries, beads, pencil tip

How to confirm foreign bodies in the nasal cavities?

Doctors will perform examination of the nose to establish the presence of foreign bodies which can be confirmed with nasal endoscope.

How is foreign body nose removed from the nasal passages?

Nasal foreign body can be removed in a clinic setting using appropriate instruments. Your child should be held sitting up on your lap close to your chest. Depending on the age, your child may need to be restrained. However, in certain circumstances, if your child is unable to cooperate, this procedure should be done in the operating theatre under general anesthesia.

Image 1: Removel nasal foreign body procedure

Why foreign bodies need to be removed?

The presence of foreign body in the nasal passages can cause

- Foul smelling nasal discharge
- Loss of sense of smell
- Inflammation (rhinitis) and sinus infections
- Pain
- Nasal blockage

Objects such as button batteries is harmful as it can cause erosion to the mucosa and bony lining of the nasal septum. This can cause perforation and hole in the nasal septum often with crusting and foul smelling discharge.

Long standing foreign bodies can become calcified and form rhinolith.

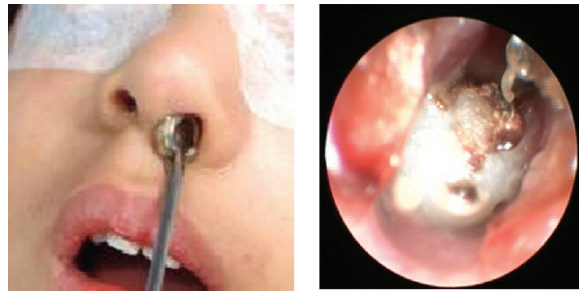


Image 2: Foreign body in nasal cavity

What happens after surgery?

Your child is allowed to eat if there are no complications. Minimal blood stained discharge from the nose is expected following the procedure. Nasal douching may be required if there is crusting in the nose.

How long will my child need to be in the ward?

The child will be monitored and will be allowed home when fit for discharge. Appointment for follow-up will be given.

What do you need to know and do after discharge?

Your child may be supplied with painkillers. A solution or nasal spray for douching is given in certain cases.

What are the possible risks and complications of the procedure?

In general, there are no serious risks associated with nasal foreign body removal. Surgical risk is low.

The possible complications are:

- Trauma to the nasal cavity
- Foreign body dislodge further back into the nasal cavity
- Inhalation of foreign body into the respiratory tract

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL .It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

SURGERY TO REMOVE FOREIGN BODY FROM THROAT AND ESOPHAGUS

Introduction

What is the procedure to remove foreign bodies from the throat and esophagus?

It is a procedure to remove foreign bodies that may be stuck in the throat or esophagus. Among common objects found are:

- Organic objects e.g. fish bone, food bolus
- Non-organic objects e.g. coin, dentures, fragments of toys

How esophageal foreign bodies can be identified?

- Radiological investigation
- Inspection of the throat using endoscopic equipment.

How are foreign bodies removed?

Foreign bodies that are visualised in the throat can be removed in the clinic if the child is cooperative. If the foreign body is not visualised or the child is uncooperative, this procedure is done in the operation theatre under general anesthesia.

Why is it needed?

- Presence of foreign body can cause difficulty in swallowing
- Delay in removing the sharp or inorganic objects may cause:
    - Abrasions in the mucosa of the esophagus
    - Inflammation and infection of the tissues nearby
    - Migration to major blood vessels of the neck
    - Esophageal perforation
    - Inflammation of the mediastinum
    - Abscesses (pus) in the neck

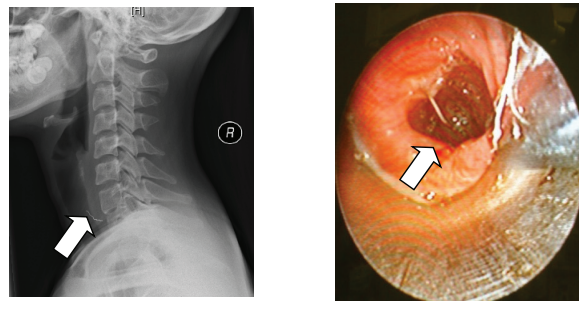


Image 1: Foreign body in esophagus

What happens after surgery?

Your child is allowed to eat if there are no complications. If there are symptoms such as shortness of breath or chest pain, please inform your doctor. In the event of complications your child may need to eat via special tube e.g.: Ryle's Tube

How long will my child need to be in the ward?

The child will be monitored in the hospital overnight. This surgery usually requires care in the hospital overnight and your child is allowed to go home after the doctor makes sure there are no complications. You will be given an appointment for follow-up treatment.

What you need to know and do after your child is discharged?

Please make sure your child gets enough rest and only do light exercise for 24-48 hours. Avoid heavy lifting or vigorous activity. Your child will recover fully within a week.

In the event of the following circumstances please contact the treating physician:

- Fever
- Chest pain
- Shortness of breath, dizziness
- Vomiting
- Difficulty in swallowing
- Prolonged pain at the base of the neck

Possible risks and complications of surgery

In general, there are no serious risks associated with this procedure. Most of these can be done easily and without any problems.

Complications that can occur are:

- Cuts in the lips, mouth or throat
- Teeth may be broken or dislodged
- Dislocation of the jaw joint
- Esophageal perforation
- Mediastinitis

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

REMOVAL OF FOREIGN BODY IN THE RESPIRATORY TRACT

Introduction

What is removal of foreign body in the airway?

This is a procedure to remove any foreign body which has dislodged in the respiratory tract or airway. More than 2/3 of the cases occur in children less than 3 years old.

Common objects are:

- Organic objects: peanut, grain such as corn seed
- Non-organic objects: beads, pins, small parts of toys

What are the investigations that can be done?

- Radiological investigation eg: x-ray
- Flexible scope

If the foreign body can be seen then your child will undergo a procedure to remove the foreign body using rigid bronchoscopy under general anaesthesia in the operating theatre.

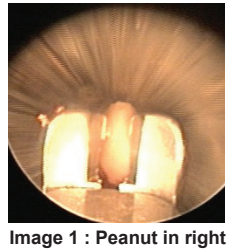


Image 1 : Peanut in right main bronchus

Image 2 : Removal procedure

Why is it needed?

Usually foreign body in the respiratory tract must be removed immediately to avoid complications like:

- Infection and inflammation of the lungs
- Bronchiectasis
- Atelectasis (lung collapse)

What happens after surgery?

After surgery your child will be placed in a recovery bay in the operation theatre. Once stable, the child will be transferred to the ward or intensive care unit as indicated. The need to undergo for X-rays after surgery is only applied for certain patients.

Cough and sore throat are common after this procedure. The child will be allowed orally once fully conscious.

How long will my child need to be in the ward?

The child will be monitored in the hospital overnight.This surgery usually requires care in the hospital overnight and your child is allowed to go home after the doctor makes sure there are no complications. You will be given an appointment for follow-up treatment.

What you need to know and do after your child is discharged?

Please make sure your child gets enough rest and only do light exercise for 24-48 hours. Avoid heavy lifting or vigorous activity. Your child will recover fully within a week.

In the event of the following circumstances please contact the treating physician

- Fever
- Chest pain
- Shortness of breath
- Dizziness
- Vomiting
- Difficulty in swallowing
- Prolonged pain at the neck

Possible risks and complications of surgery

In general, there are no serious risks associated with this procedure. Most of these can be done easily and without any problems. Complications such as:

- Cuts in the lips, mouth or throat
- Teeth may be broken or dislodged
- Dislocation of the jaw joint
- Surgical emphysema
- Pneumothorax
- Pneumonia

Is it possible that foreign body cannot be removed?

Yes, failure to remove foreign body through endoscopy is possible. Thoracotomy may be needed.

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

EXIT - EX UTERO INTRA-PARTUM PROCEDURE

Introduction

What is the EXIT procedure?

It is a procedure done to babies who are diagnosed to have breathing difficulty or respiratory tract obstruction in the womb (intra-uterine).

This procedure is done in a controlled environment in the operation theatre with collaboration between the Obstetrician, Anaesthetist, Paediatrician and Otorhinolaryngologist in order to deliver the baby by Caesarean section operation safely.

It is done in cases with obstruction to upper airway tract due to congenital neck swelling or tumors such as cystic hygroma, teratoma and others.

Why is it needed?

It allows examination of the upper airway tract in a newborn to be done in an orderly and safe manner. Further procedures for ensuring and securing patency of the airway tract such as bronchoscopy, endotracheal intubation and tracheostomy can be done.

This procedure can prevent lack of oxygen to the baby, brain injury from ischaemia, and death as it is done with the baby's umbilical cord still intact while only the head and shoulder are delivered. This allows the partially delivered baby to breathe through the undetached maternal placental circulation

What should mothers undergo before the procedure?

Early diagnosis is done by a maternity specialist (obstetrician) through an abdominal ultrasound test. To confirm the diagnosis, the mother should undergo fetal MRI (magnetic resonance imaging)

A discussion and counseling prior to the procedure will be performed between the parents, the Obstetrician as well as the Otorhinolaryngologist (Ear, Nose and Throat surgeons) who will be managing the baby's airway.

This session is also done to decide the most suitable date for the procedure which is usually earlier than the expected date of delivery. A collaboration with the Anaesthetist and the Paediatrician will also be arranged.

What will happen after the procedure?

After the airway is already secured by endotracheal tube or tracheostomy, the umbilical cord is cut and the baby will be completely removed from the mother's womb.

The baby will be sent to the neonatal intensive care unit.

Further treatment of the tumor or swelling of the neck will be done after the baby undergoes definitive diagnostic imaging tests such as CT scan or MRI. Timing and method of treatment depends on the baby's condition, size and nature of the swelling.

What are the risks and complications of the procedure?

Despite EXIT being the only controlled procedure in an attempt to ensure airway patency in a newborn baby with anticipation of upper airway obstruction, there are still possible risks and complications that parents have to understand:

- Risk of reduced oxygenation to the brain (hypoxia) and acidosis
- Risk of lowered body temperature (hypothermia)
- Unavoidable anatomical and technical difficulty of securing the airway

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

MANAGEMENT UPPER AIRWAY OBTRUCTION FOR CHILDREN

Introduction

What Is Upper Airway Obstruction?

Upper respiratory tract is a passage by which air reaches a person's lungs, starting from the nose to the main bronchus.

Children with upper airway obstruction can present with noisy breathing.

Among the conditions that can cause this problem:

- Obstruction at the level of nose and throat such as:
    - o Enlargement of the lymphoid tissue at the posterior nasal space known as adenoid
    - o Enlargement of the tonsils
    - o Congenital nasal obstruction e.g. posterior choanal stenosis
    - o Congenital swelling or tumors e.g. cyst and teratoma

- Obstruction at the level of larynx to the main bronchus:
    - o Congenital laryngeal anomalies e.g. laryngomalacia and subglottic Stenosis
    - o Acquired causes such as inflammation of epiglottis (epiglottitis) and airway foreign bodies.

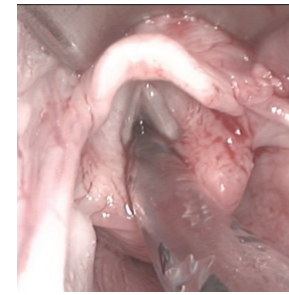


Image 1 : Vallecular cyst before and after procedure

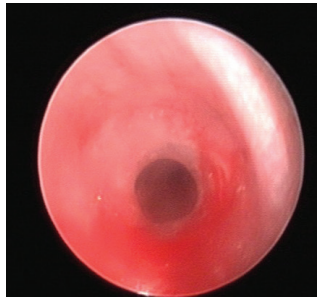


Image 2 : Stenosis subglottic

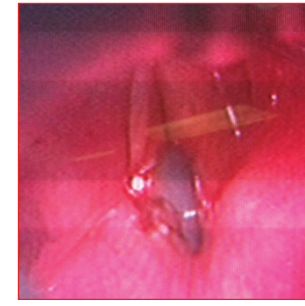


Image 3 :Laser Intraoperatif – "Vocal cord palsy"

How can this problem be managed?

The cause and severity of upper airway obstruction in children can only be established with a diagnostic endoscopy.

A flexible endoscopy can give an overview or a general idea of the problem. It shows the dynamic movement of the voice box (vocal cords or glottis) and the structures above it. This procedure can be done in an awake child in the clinic.

If patency of the airway below the vocal cords needs to be assessed and there is an intervention needed, your child has to undergo a rigid bronchoscopy under general anaesthesia in the operation theatre. This will enable a definitive diagnosis be made while its urgency will depend on the symptom severity.

What is a Flexible Endoscopy?

It is a procedure involving the use of a flexible nasoendoscope that is introduced through your child's nasal cavity to examine the nasal airways till the larynx. It is usually done with aided visualization by a video camera system.


Image 4 : Endoscopy procedure

What is a rigid bronchoscopy?

This procedure is performed in the operation theatre under general anesthesia using a rigid bronchoscope, telescope and camera system.

Image 5: Bronchoscopy procedure

What is a tracheostomy?

Every infant or child who needs a rigid bronchoscopy for upper airway obstruction has to consent for the possibility of tracheostomy.

Pediatric tracheostomy is a procedure to make an air passage through the neck directly into the trachea. A paediatric-sized tracheostomy tube will be placed through the stoma. Subsequent treatment will depend on your child's airway problems.

Image 6: Tracheostomy in children

What is the most common congenital cause of noisy breathing in infants?

Laryngomalacia is the most common congenital upper airway problem in infants. It is a condition in which the structure of the larynx above the vocal cords (supraglottis) is easily prolapsed into the glottic opening during inspiration due to its flacidity and incoordination.

Symptoms usually appear at birth and becomes more pronounced after the first 2 weeks of life. In most cases symptoms will improve or resolve spontaneously by the age of 2 years.

A proportion of children who suffer from severe symptoms such as cyanosis, transient cessation of breathing during sleep (apnoea), poor weight gain or failure to thrive and difficulty in feeding should undergo supraglottoplasty or aryepiglottoplasty procedure.

What are the risks and complications of rigid bronchoscopy?

- Lack of oxygen to the brain (hypoxia)
- Bronchospasm
- Difficulty to secure the airway
- Swelling of the airway

Are there other alternatives?

If your child with symptoms of upper airway obstruction do not undergo these procedures, there will be:

- Inability to secure airway patency which is life-threatening
- Inability to identify the cause of upper airway obstruction
- Inability to execute appropriate treatment

Disclaimer:

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

ENDOSCOPIC EXAMINATION

Introduction

Endoscopic examination is the examination of the hollow parts which are difficult to visualize with the naked eye using endoscopy. The parts that can be examined are the nasal cavity, back of the nose, throat, larynx, bronchi and esophagus. Endoscopy can be flexible or rigid types can be done under general or local anesthesia. Biopsy can be taken from the findings of endoscopy and sent to the laboratory for further examination. Patients will be informed of relevant laboratory results for further treatment.

NASAL ENDOSCOPY

Introduction

It is a routine procedure in The Otorhinolaryngology Department.

Nasal endoscopy is a scope that is ensured with a light source and camera. It is used to examine inside the nose, including the sinuses and back of the nose. It can be seen through the monitor and recorded.

It serves as a diagnostic tool and helps in taking biopsies in difficult places. It also helps in removing the foreign body.

Why should perform endoscopic procedures?

Indications for nasal endoscopy are

- Early detection of diseases in which nasal in origin such as nose bleed,nasal blockage, nasal discharges and any growth or mass inside the nose
- Detection of Cerebrospinal Fluid (CSF) if presence of leakage
- Examination and treatment for foreign objects in the nose
- Examination and treatment for epitaxis (nose bleed)
- Examination for hyposmia or anosmia (reduce sense of smell)

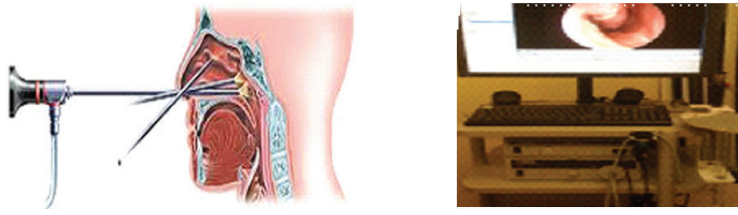


Illustration 1 : Nasal endoscopy

What are tools that needed for this procedure?

- Rigid or flexible endoscopy according to the size needed
- Monitor with video system to record and examine
- High quality light source and light cable
- Suction machine
- Biopsy equipment

How to do this procedure?

- Nasal cavity is sprayed with anesthesia. Subsequently, examination can be done by using endscope and findings are identified as:
- Discharge (the origin parts), presence of inflammation or hypertrophic mucosa, nasal polyps or tumors
- Any anatomical abnormalities (example: septal deviation, spur, concha bullosa or accessory ostia).
- Biopsy can be taken and sent to the lab for further examination.

What are the effects or complications that can arise from this procedure?

Overall, nasal endoscopy is a safe procedure with low risk.

However, complications can include:

- Allergic reaction to topical decongestant drugs such as shortness of breath and sweating
- Bleeding that does not stop due to biopsy taking, blood thinning medications or tumor
- Fainting due to effect of the procedure (vasovagal)

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

ESOPHAGOSCOPY

Introduction

Esophagoscopy is the endoscopic examination of the gastrointestinal tract. It can be done using rigid or flexible esophagoscope. Most examinations in the Otorhinolaryngology Department use rigid scope. It is performed for diagnostic purpose, dilatation or removal of the foreign body.

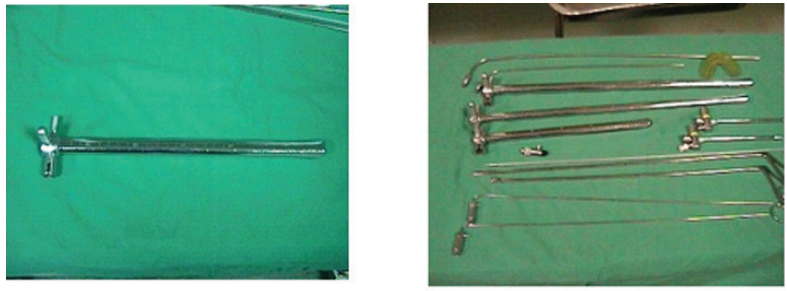


Image 1: Esophagoscopy equipment

Image 2: Esophagoscopy procedure

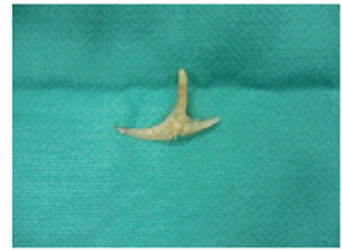


Image 3: Removal of the foreign body (fish bone)

What are the purposes for doing this procedure?

Indications for esophagoscopy are:

- Identification and removal of the foreign body
- Evaluation and management of swallowing problems, including esophageal dilatation if presence of blockage
- Assessment and management odynophagia (painful in swallowing)
- Evaluation and management of esophageal cancer including esophageal stent placement
- Evaluation of the esophagus after abnormal imaging studies
- Evaluation and management of gastroesophageal reflux disease (GERD) including chest pain non cardiac origin

How does rigid esophagoscopy being done?

- The patient is given general anesthesia.
- Rigid esophagoscopy inserted through the mouth and directly into the gastrointestinal tract. The findings are identified. Then biopsy, dilatation or removal of the foreign body can be done.
- When the procedure is completed, the endoscope is removed from the patient and the patient is monitored for any complications.

What are the effects or complications can arise from the procedure?

Esophagoscopy is considered as a safe procedure with the risk of complications approximately 1 per 1000 procedures.

Complications include the following:

- Persistent bleeding
- Esophageal perforation and infection
- Respiratory problems
- Reaction to anesthetic drugs

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned.

BRONCHOSCOPY

Introduction

Bronchoscopy is the examination of the bronchus for both diagnostic and therapeutic. Flexible bronchoscopy examination can be carried out under local anesthesia, while rigid bronchoscopy is under general anesthesia.

Flexible Bronchoscope is inserted into the airway, usually through the nose, mouth or tracheostomy site.

Any abnormalities such as foreign body, bleeding, tumor or inflammation can be identified. Biopsy, removal of the foreign body or suction can be done during the procedure. Specimens are taken from the trachea/bronchus will be sent to the laboratory for further examination.

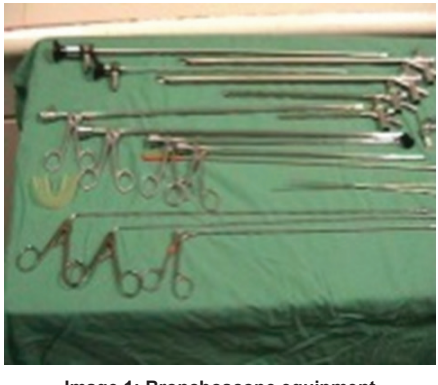


Image 1: Bronchoscope equipment

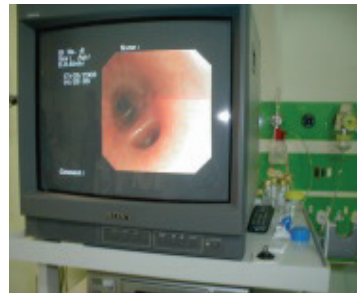


Image 2: Flexible bronchoscopy procedure

Image 3 : Rigid bronchoscopy procedure

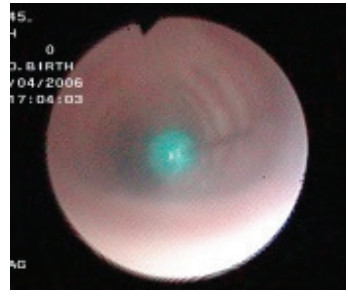


Image 4 : Foreign body in bronchoscopy

Why is the procedure necessary?

Bronchoscopy can be used for diagnosis or treatment.

Bronchoscopy is used to make a diagnosis for these conditions:

- Prolonged cough or unexplained cause
- Blood in the sputum (coughing out mucus from the lungs)
- Chest X -ray abnormalities such as masses, nodules or inflammation in the lungs
- Evaluation of lung infection of unknown cause

Bronchoscopy is used for treatment for these conditions:

- Removal of foreign body in the respiratory tract
- Placing a stent (small tube) to open the airway in which narrowed by pressure from the mass or tumor
- Removal of the tumor or mass that obstructing the airway

How is the procedure being performed?

- Screening using flexible bronchoscopy can be made under local anesthesia.
- Patient will be given antisecretory and antianxiety medications (to reduce secretion in the bronchus and to reduce anxiety)
- Patient is monitored during the procedure via the concentration of oxygen, blood pressure, heart rate and pulse rate.
- Patient will be positioned in the sitting or supine position.
- Once the bronchoscope is inserted into the upper airway, the vocal folds are examined and additional anesthesia is given. The patient will feel some discomfort or even cough.
- The bronchoscope is then introduced into the trachea and bronchus.
- If an abnormality is detected, biopsy or fluid will be taken for further laboratory examination.
- This procedure can also be performed on patients in intensive care unit via the intubation tube.

What are the effects or complications that can arise from this procedure?

Complications of bronchoscopy are relatively rare and usually not serious.

Here is a list of potential complications:

- Nose bleeding (epistaxis)
- Injury to the voice box
- Irregular heartbeat
- Lack of oxygen to the body tissues
- Bleeding from the biopsy site
- Perforation and contracted lungs (pneumothorax)
- Injuries to the teeth
- Complications from pre- medication or general anesthesia

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

LARYNGOSCOPY

What is the larynx?

The Larynx consists of the voice box that is involved in the voice production. It protects the airway against the entry of food into the trachea. It is connected to the respiratory tract.

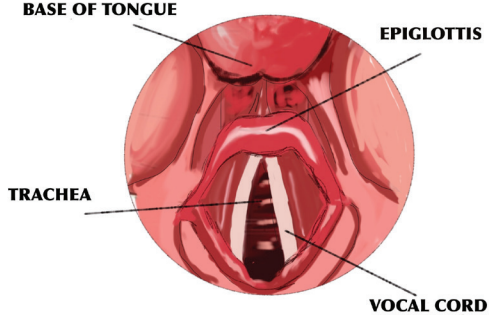


Illustration 1 : Laryngoscopy

Why is this procedure indicated?

Diagnostic

- Examination of the non-visualize parts of pharynx and larynx

Therapeutic

- Removal of benign tumors in the larynx such as papilloma, fibroma, vocal cord nodules, polyp or cyst or early cancer (carcinoma in situ- CIN)
- Removal of foreign body in the larynx and hypopharynx
- Dilatation of the stenosis part in the pharynx and larynx

How is the procedure being performed?

- The patient is given general anesthesia
- Laryngoscope is inserted through the mouth and examination started at the base of the tongue, epiglottis and larynx
- Under the microscope visualization, surgery or biopsy can be done
- Once the procedure is completed, teeth and tongue are inspected to ensure no injury has occurred
- The procedure usually takes a short time
- Patient will be sent to the observation bay after the procedure is completed

How long does the patient has to stay in the hospital?

- Patient will be allowed to eat and drink after no effects of general anesthesia and no complications are suspected
- Patients can go home the next day, if there is no complication
- The patient will be given a follow-up appointment if necessary

What are the possible complications?

- Injury to the lips and tongue
- Injury to the teeth such as broken teeth falls into the pharynx
- Bleeding during and after the surgery
- Inflammation of the larynx causing difficulty in breathing

Is there any alternative treatments?

Since the procedure is deem necessary, there is no available alternative.

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

PANENDOSCOPY

What is panendoscopy?

- Panendoscopy is the examination of the upper aerodigestive tract (respiratory tract and digestive tract)
- This includes nasal endoscopy, laryngoscopy, bronchoscopy and esophagoscopy.
- It is done for those with cancer of unknown origin
- Biopsy will be taken in certain areas to determine origin of the cancer and send to the laboratory for further examination.

Why do I need panendoscopy?

This is being done to find the origin of cancer in the neck and throat area and encompassesnasoendoscopy, laryngoscopy,oesophagoscopy and bronchoscopy (if needed)

How does the operation being carried out?

This procedure is performed under general anesthesia and the procedures are described above

Does this procedure have complications?

Yes but this is a safe procedure and complications are rare; as mentioned undereach procedure described above.

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

PATIENT INFORMATION LEAFLET

This leaflet contains general information regarding the surgical procedure in ORL. It is not intended to replace the advice of a doctor. It is important for you to get enough information to enable you to consider the benefits and risk of complications in turn helps in making decisions regarding the consent for the surgery. This leaflet is also a guide for optimal recovery after the surgery. Please read them carefully. Some of the terms may need further explanation and clarification from the doctor. While patients have the right to be advised of the surgical procedure, this leaflet cannot explain it from all aspects. Therefore, if you have any information that you do not understand, any doubt, queries or any reservation regarding this surgical procedure, please discuss with the doctor concerned

SIALOENDOSCOPY

Introduction

- There are 2 pairs of salivary glands, known as the parotid and submandibular. They are located on the cheeks and under the lower jaws
- The ducts of these glands may be blocked due to presence of the stones, infection or narrowing
- Sialoendoscopy can be used for diagnostic and therapeutic for removing of the stones and dilatation of stenosis. It involves the usage of a specialized flexible endoscope.

What is sialoendoscopy ?

- Sialoendoscopy is a technique that allows clear visualization of the salivary glands ductal system
- It can provide treatment for salivary gland obstruction, strictures and sialoliths (salivary stones)
- It can be performed under local anesthesia in the outpatient clinic or in the operating theater under general anesthesia based on the doctor's recommendation

When is Sialendoscopy is done?

- In recurrent salivary gland infection
- Post radioactive iodine treatment
- Post radiotherapy

How is the procedure being performed?

The patient is given local or general anesthesia.

What are the effects or complications from this procedure?

In general, siaolendoscopy regarded as a safe procedure and it is minimally invasive. However, complications can occur in every procedure such as:

- Failure to remove the stones or to dilate the narrowing
- Puncture the wall of salivary gland duct
- Infection after the procedure
- Numbness of the tongue (temporary)
- Recurrent symptoms
- Tear in the salivary gland duct
- Narrowing of the salivary gland duct

Is there any alternative treatment?

Surgical removal of the salivary gland will be an option

Disclaimer :

- *In general, all surgical procedures have risks. Even if it is done in an ideal situation of the highest standards, complications do happen. There is no guarantee that the problem will not recur.*
- *It is not possible for your doctor to explain in every possible side effects or complications in detail especially those which rarely occur. It may need another surgery to deal with these complications.*
- *Complications listed in this leaflet are intended to provide information to you and is not meant to scare you. There are other side effects and complications that may happen not listed in this leaflet.*
- *Most patients do not experience any complications, but, if you have any questions or concerns, please consult your doctor.*
- *If you are concerned about the recovery process or experience any problems after surgery, please come back to the hospital for treatment.*

CHIEF AUTHOR:

DR ABD RAZAK AHMAD, H.MELAKA

AUTHORS:

DATO' DR ABD MAJID MD NASIR,HKL
DATIN DR SITI SABZAH MOHD HASHIM, H.SULTANAH BAHIYAH
DR ABD RAZAK AHMAD,H.MELAKA
DR ISKANDAR HAILANI,HKL
DR ZAINAL AZMI ZAINAL ABIDIN, H.SELAYANG
DR MOHAMAD KHIR ABDULLAH,H.PAKAR SULTANAH FATIMAH
DR PHILIP RAJAN, H.RAJA PERMAISURI BAINUN
DR SARAIZA ABU BAKAR,H.SERDANG
DR PATIMAH AMIN, BAHAGIAN PERKEMBANGAN PERUBATAN

ASSISTANT AUTHORS:

DR AZMAN ALI, H.MELAKA
DR NATHAN RAJA, H.MELAKA
DR SITI SARAH ABD RAZAK, H.MELAKA
DR RAFIZA ABDUL RAHIM, H.RAJA PERMAISURI BAINUN
DR LINA LING CHOOI, H.RAJA PERMAISURI BAINUN
DR ANUSHA BALASUBRAMANIAM, H.RAJA PERMAISURI BAINUN

EDITOR:

DR ISKANDAR HAILANI, HKL
DR PHILIP RAJAN, H.RAJA PERMAISURI BAINUN

REVIEWERS:

DATIN DR SITI SABZAH MOHD HASHIM, H.SULTANAH BAHIYAH
DATO' DR GURDEEP SINGH, H.RAJA PERMAISURI BAINUN
DR TENGKU MOHAMED IZAM TENGKU KAMALDEN, H.SULTAN ISMAIL
DR ONG CHENG AI, H.QUEEN ELIZABETH
DR FARIDAH HASSAN, H.SELAYANG
DR AVATAR SINGH MOHAN SINGH, H.TAIPING
DR NURLIZA IDRIS, H.TUANKU FAUZIAH, KANGAR

DR NORLEZA AHMAD NORHAN, H.SULTANAH AMINAH
DR NORZI GHAZALI, H.SULTANAH BAHIYAH
DATO' DR NARIZAN ARIFFIN, HKL
DR DIPAK A/L BANARSI DASS, HKL
DR ROSDI RAMLI, H.RAJA PEREMPUAN ZAINAB II
DR AMRAN MOHAMAD, H.SULTANAH NUR ZAHIRAH
DR NOR AZMI MUHAMAD, H.SELAYANG
DR MOHD RAZI BIN MAT SAUD, H.RAJA PEREMPUAN ZAINAB II
DR ZULKIFLEE SALAHUDIN, H.RAJA PEREMPUAN ZAINAB II
DR PUA KIN CHO, H.PULAU PINANG
DR SUHAIMI YUSUF, H.RAJA PEREMPUAN ZAINAB II
DR HASHIMAH ISMAIL, H.RAJA PEREMPUAN ZAINAB II
DR MOHAMMAD AMIN BIN ONN, H.RAJA PEREMPUAN ZAINAB II
DR BALWINDER SINGH, H.PUTRAJAYA

SECRETARIAT

SURGICAL AND EMERGENCY SERVICES UNIT,
MEDICAL DEVELOPMENT SERVICES SECTION,
MEDICAL DEVELOPMENT DIVISION

DR PATIMAH AMIN
K/J S.PREMALATHA A/P SUBRAMANIAM
PUAN SYEZERIN ERNI ABU BAKAR
PUAN CHUNG YUN MUI@SUZANNA