**Otoscope**

**It is a hand-held battery operated instrument used to visualize the external auditory canal, tympanic membrane and the middle**

## Advantage of Otoscope

**1-Easy to use**
**2-Provides illuminations view**
**3-Provides magnified view**
**4-Allows free movement of the examiner**
**5-portable**

# Normal Tympanic membrane

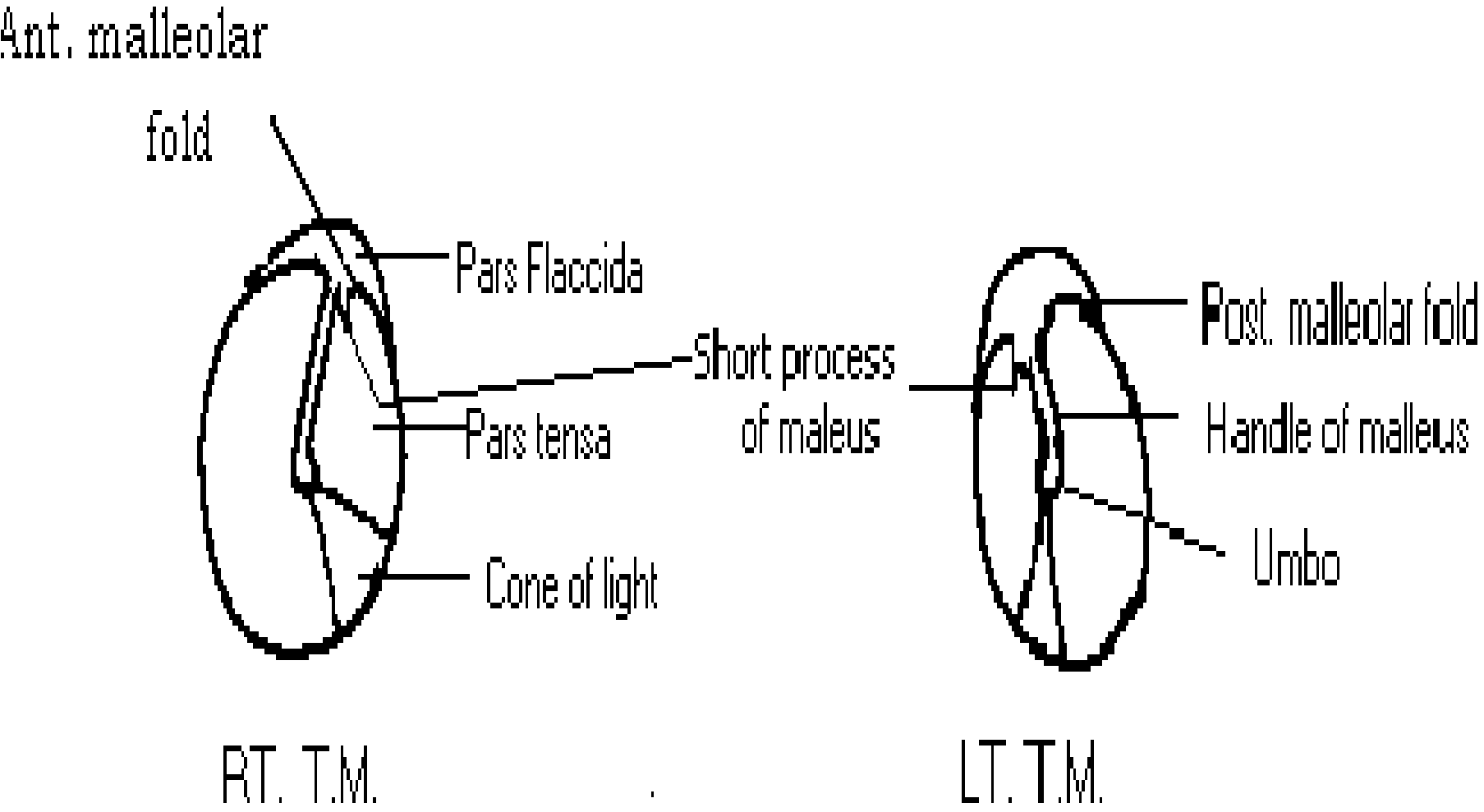
1- The Handel of Malleus

2-The Cone of Light

3-lateral process of Malleus

4-Pars Tensa

5-Pars Flaccida


Ant. malleolar
fold
Pars Flaccida
Short process
of maleus
Pars tensa
Cone of light
Post. malleolar fold
Handle of malleus
Umbo
RT. T.M.
LT. T.M.

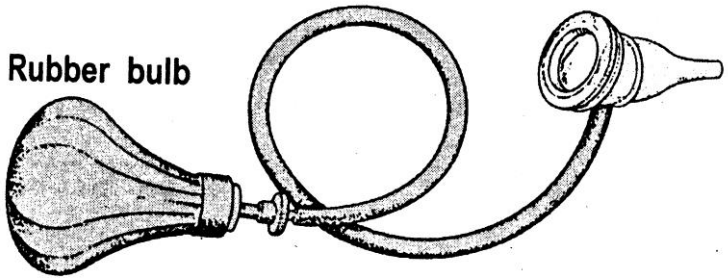
# Pneumatic examination

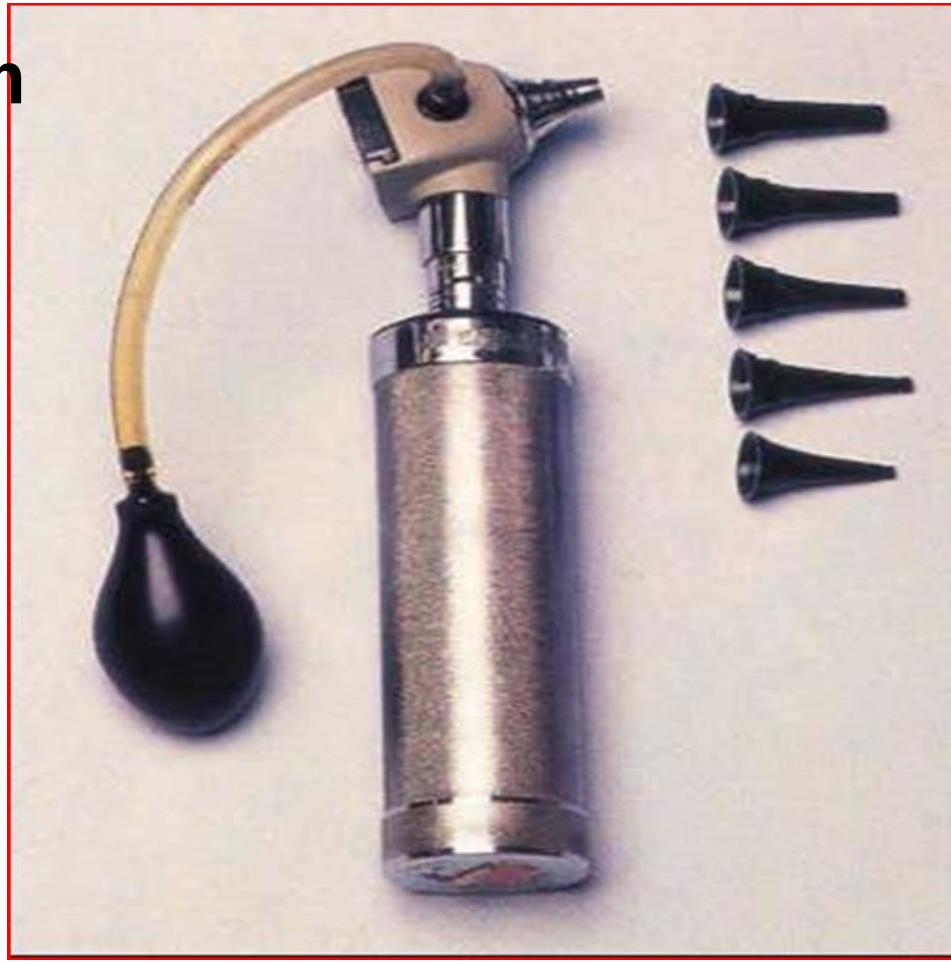
**Left : Seigle's Speculum**

**Right : Pneumatic Otoscope**

**To assess Mobility of Drum**

**To perform Fistula test**



## 8. Siegel pneumatic speculum with bulb

**Parts:**

**a. Rubber bulb** **b. Rubber tube**

**c. Aural speculum** **d. Eye piece with an oblique convex lens [Parallel to the tympanic membrane].**

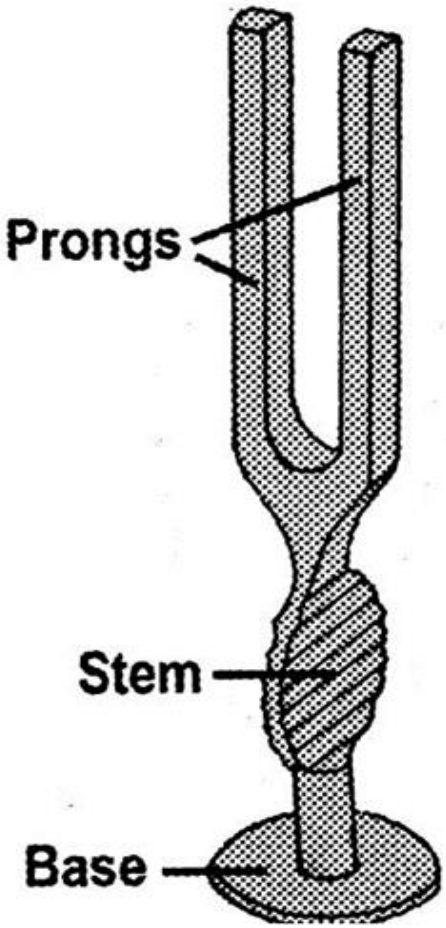
**Uses:**

**a. Siegelization**

**b. Fistula test**

**c. Examination of external ear canal and tympanic membrane.**

**d. Instillation of medications.**


Prongs
Stem
Base

**Tuning fork)**

**Parts:**

**a. Two prongs** **b. Shoulder**

**c. Stem** **d. Base.**

**The tuning fork is struck at the junction of upper one-third and lower two-third of the prongs. The vibrating tuning fork with the prongs in the acoustic axis is placed at a distance of 2.5 cm from the auricle for air conduction. The vibrating tuning fork is then placed with the base touching the mastoid process for bone conduction. It is available in various frequencies—128, 256, 512 and 1024. The 512 Hz tuning fork is commonly used for the following reasons.**

**a. It is present in the mid speech frequency range**

**b. Overtones are minimal**

**c. Sound is more auditory than tactile in nature**

**d. Tone decay is optimal.**

**Uses of the tuning fork:**

**To detect the type of hearing loss**

**1. Jobson-Horne ear probe with ring curette**

It has two ends. One end has a straight and the other end has a ring.

Uses:

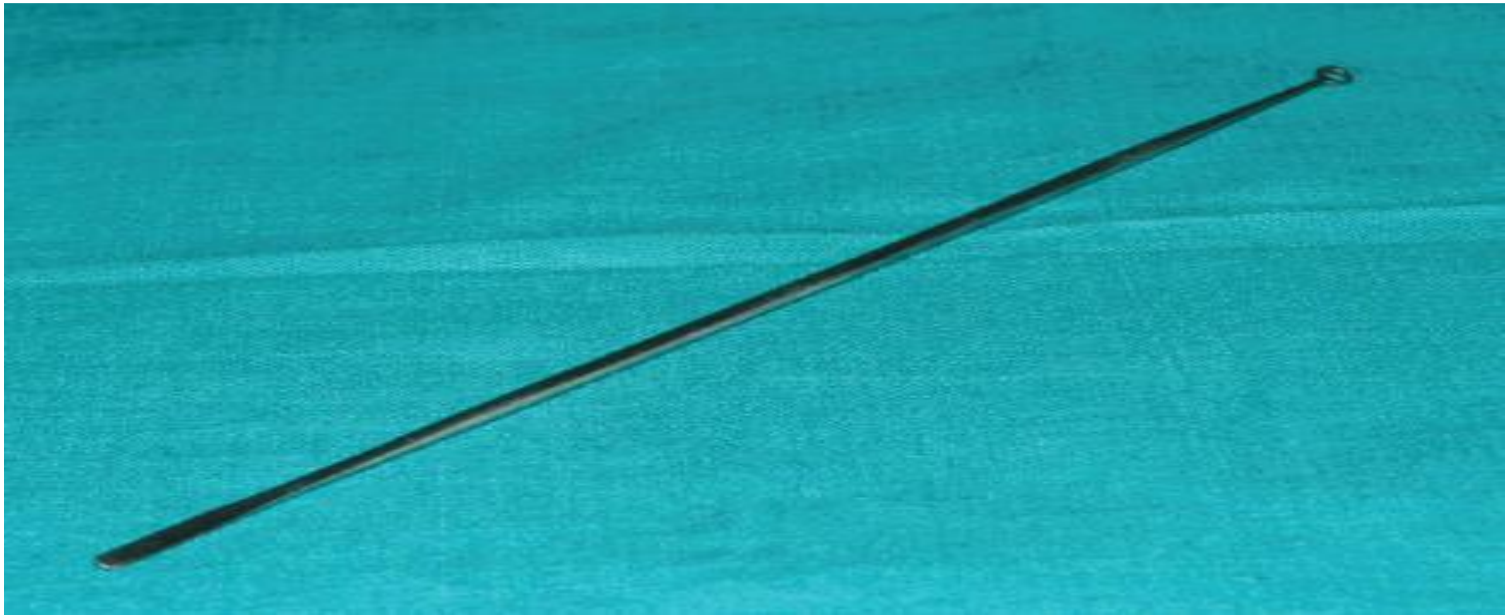
a. Removal of wax

b. Removal of foreign body in the ear and nose

c. Removal of granulations in the ear

d. The probe end is used to probe polyp in the nose and ear

e. The probe end can act as a cotton swab carrier and can clean the ear or apply medication.



## Ear vectis with cerumen spud (Fig. 1.2)

**This instrument is used to remove wax and foreign bodies from the ear. One end of this instrument has a ring vectis while the other end has a blunt curette.**

## Hartmann aural forceps (Fig. 1.3)

This resembles the Tilley aural forceps. However, the tip is wide and spade like. Hence, this is used to deliver dressings and medications into the ear. It can also be used to remove foreign bodies in the ear canal.

## Troeltsch aural forceps (Wilde) (Fig. 1.4)

This is a forceps used both in the ear and nose. It can be used to pack and unpack spaces and cavities. It can also deliver medications in dressings

## Tilley aural forceps (Fig. 1.5)

**This is an angled instrument with serrations only at the tip of the blades. It can also be used in the nose.**

**Uses:**

**a. For packing or unpacking the ear canal or mastoid cavity**

**b. For delivery of medicated dressings into the ear canal**

**c. For packing and unpacking the nose**

**d. Removal of foreign body/crusts/debris in the nose and ear.**

## 6. Aural speculum

This is an instrument used to examine the external ear canaland the tympanic membrane.

**Uses:**

a. Examination of the external ear canal and tympanic membrane
b. Removal of wax, foreign body, otomycosis or ear discharge
c. In operative procedures like myringotomy, myringoplasty, stapedotomy, stapedectomy
d. For transcanal injections.

**There are several types of aural speculum.**

a. Hartmann aural speculum

This is a funnel shaped speculum that has no slit on the body. The broader end is thickened for better grip.

b. Rosen aural speculum

This is an aural speculum with an incomplete slit on its body. The slit is useful for injections on the external canal wall with the speculum in place.

Hartmann aural speculum

Rosen aural speculum

# 1. Thudicum nasal speculum (Fig. 2.1)

This is a self-retaining nasal speculum commonly used in the ENT outpatient clinic. It is held over the hooked index finger of the non-dominant hand. The blades are then closed by pressing between middle and ring finger.

**Uses:**

**a. Diagnostic: Anterior rhinoscopy—nasal septum, Little's area, lateral wall of nose, nasal cavity**

**b. Therapeutic: removal of foreign bodies, antral wash, nasal packing, surgical procedures inside the nose.**

## Killian short and long bladed nasal speculum (Fig. 2.3)

**This is a self-retaining nasal speculum and is available with blades of different sizes. The distance between the blades can be adjusted and fixed with a screw.**

# Uses:

**a. Diagnostic: Anterior rhinoscopy—nasal septum, Little's area, lateral wall of nose, nasal cavity**

**b. Therapeutic: Removal of foreign bodies, antral wash, nasal packing, surgical procedures inside the nose like polypectomy, SMR, septoplasty, etc.**

## Nasal foreign body hook (Fig. 2.6)

Used to remove nasal foreign body by accessing the posterior part of the foreign body

# St. Clair Thompson posterior rhinoscopy mirror

The mirror is now introduced behind the soft palate without touching the posterior pharyngeal wall to reflect the light towards the nasopharynx. This instrument can also be used to examine the postnasal space after adenoidectomy to look for remnants if left any.

## Nasal rigid endoscopes (Fig. 2.20)

**Types:**

a. Adult: outer diameter is 4 mm

b. Pediatric: outer diameter is 2.7 mm

**Range: 0, 30, 45, 70, 90 and 120 degrees. Each is 18 cm long**.

- **Zero degree scope is the most commonly used of all as it has a direct forward looking orientation.**
- **The 30 degree scope is the endoscope of choice for diagnostic nasal endoscopy. It allows better visualisation of the structures in the lateral wall of nose.**
- **The 70 and 90 degree scopes are useful to visualise, work in the frontal recess and the maxillary antrum. They are also useful to visualise the laryngeal and hypopharyngeal inlet as an alternative to indirect laryngoscopy.**

## **Flexible nasopharyngoscope** (Fig. 2.24)

Rhinofiberscopes are used to view the nasal cavity, the lateral wall, eustachian tube opening and the nasopharynx. The tip is movable distally and hence can enter the crevices and spaces inside the nasal cavity. These scopes can also be used to visualize the laryngeal inlet and hypopharynx also. The fiberscopes can be connected to a camera for magnification, better visualization and recording of the images

## Blakesley Weil straight cupped forceps (Fig. 2.31)

**This is a single action forceps used to remove the bulla ethmoidalis and other ethmoidal air cells. This is also used to remove polyps and other nasal masses.**