

Some thoughts on Siegel's Speculum

Unfortunately, Siegel's Speculum is a relatively less used instrument in our routine practice. It has three parts, a set of 3-4 speculums; a console fitted with a convex lens with x2 magnification and a pneumatic bulb to push air through the ear speculum.

It has following functions:

- ❖ To get a magnified view of the tympanic membrane.
- ❖ To assess mobility of the tympanic membrane.
- ❖ To differentiate between a retraction pocket and perforation especially when it is in postero-superior quadrant
- ❖ To alter pressure in the middle ear to look for:
 - A third window in inner ear, which can be of three types mere exposure of the endosteum of the labyrinth or actual labyrinthine fistula leading to leakage of perilymph in the middle ear or superior canal dehiscence syndrome.
 - To create a negative pressure in the middle ear and fix the ossicular chain to perform Gelle's test using tuning fork/audiometer
 - Reservoir sign: Although reservoir sign is a passive phenomenon i.e. reappearance of ear discharge from the perforation when the discharge has been cleaned, you can elicit it with the siegel.
 - To differentiate between a very very thin healed TM which may mimic perforation.

Explanation of the concepts:

In those days when the otoscopes as we see them today were not available ENT surgeons used the speculum to get a magnified view of the TM. There are situations when we need to confirm the mobility of TM:

- ❖ Retracted TM: When TM shows retraction we want to see its mobility to differentiate it from adherent TM (In long standing retraction TM may become adherent to promontory)
- ❖ We also want to see if the mobility is reduced in all the quadrants or some of the quadrants are mobile. It is essential when you want to place a grommet, because you will not like place a grommet in a retracted and fixed quadrant of pars tensa.
- ❖ You can also make an idea about areas of atelectasis in the middle ear cavity.
- ❖ Altering pressure in the EAC we can suck out discharge from a postero-superior perforation. This will help us differentiate it from a retraction pocket.

Fistula test:

The fistula test is performed by applying positive and negative pressure to the intact eardrum using a pneumatic otoscope or by pressing tragus.

When positive pressure is applied with the pneumatic otoscope there is Onset of Nystagmus towards ipsilateral ear.

When negative pressure is applied with the pneumatic otoscope nystagmus also reverses & changes its direction towards contralateral ear.

Hennebert's Sign:

It is a false positive fistula test when there is no evidence of middle ear disease causing fistula of horizontal semicircular canal. |

- ❖ It is seen in 25% cases of Meniere's disease or congenital syphilis.
- ❖ In 25% cases of Meneire's, fibrous bands form connecting utricular macule to stapes footplate.
- ❖ In syphilis due to hypermobile stapes footplate.

Gelle test:

This test is based on the phenomenon which consists of the decrease in the loudness of a bone conducted sound when the air pressure in EAC is increased. This effect is found in individuals with a normal sound conducting mechanism. This phenomenon is absent in patients with stapedial ankylosis.

Method:

- ❖ I think it is important to keep the lens clean to get a clear view otherwise when you through light on the lens the spots become visible and make the view blurred.
- ❖ Always use the largest possible speculum so that it snugly fits in the EAC and ait-tight effect is produced.
- ❖ Hold the speculum firmly and do not push it beyond isthmus
- ❖ If you use right size speculum entire TM will automatically come into view otherwise, you will have to move the speculum up and down to see all the quadrants
- ❖ Gently press the bulb and look for mobility of the drum.
- ❖ If there is a fluid behind intact drum the air bubbles or meniscus will also move.
- ❖ Sometimes a thin atrophic membrane looks like a perforation but when you apply pressure reflection will be visible from the atrophic drum.
- ❖ Symptoms of vertigo can be enquired from the patient but to see nystagmus you will need somebody to look for it.