Continuing Professional Development: Department of Oto Rhino Laryngology

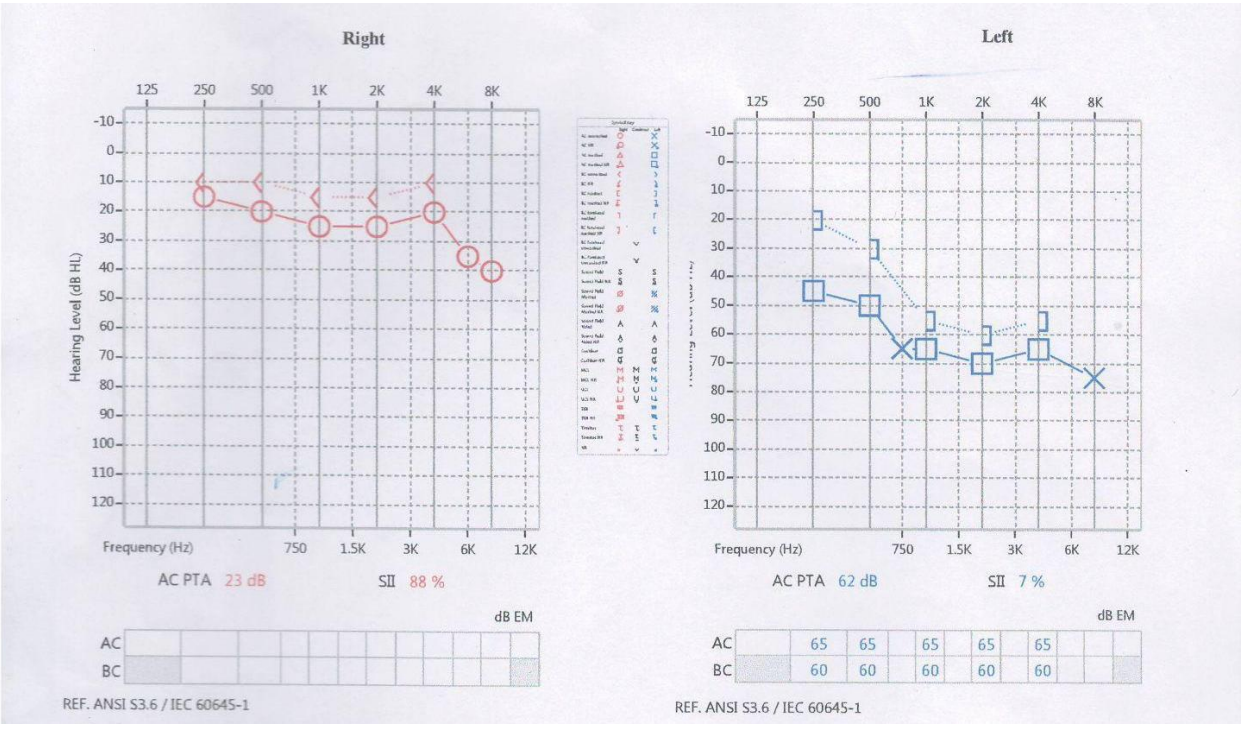
Scenario 1

A 69 year old male patient presents with complaints of decreased hearing left ear noticed for 1 month. There was no history of vertigo or tinnitus. There is no associated URTI. Pure tone audiometry showed the following results:

1) What do the dotted lines on the graph represent?
2) What do the straight lines on the graph represent?
3) What is the inference from the report?

Answers:

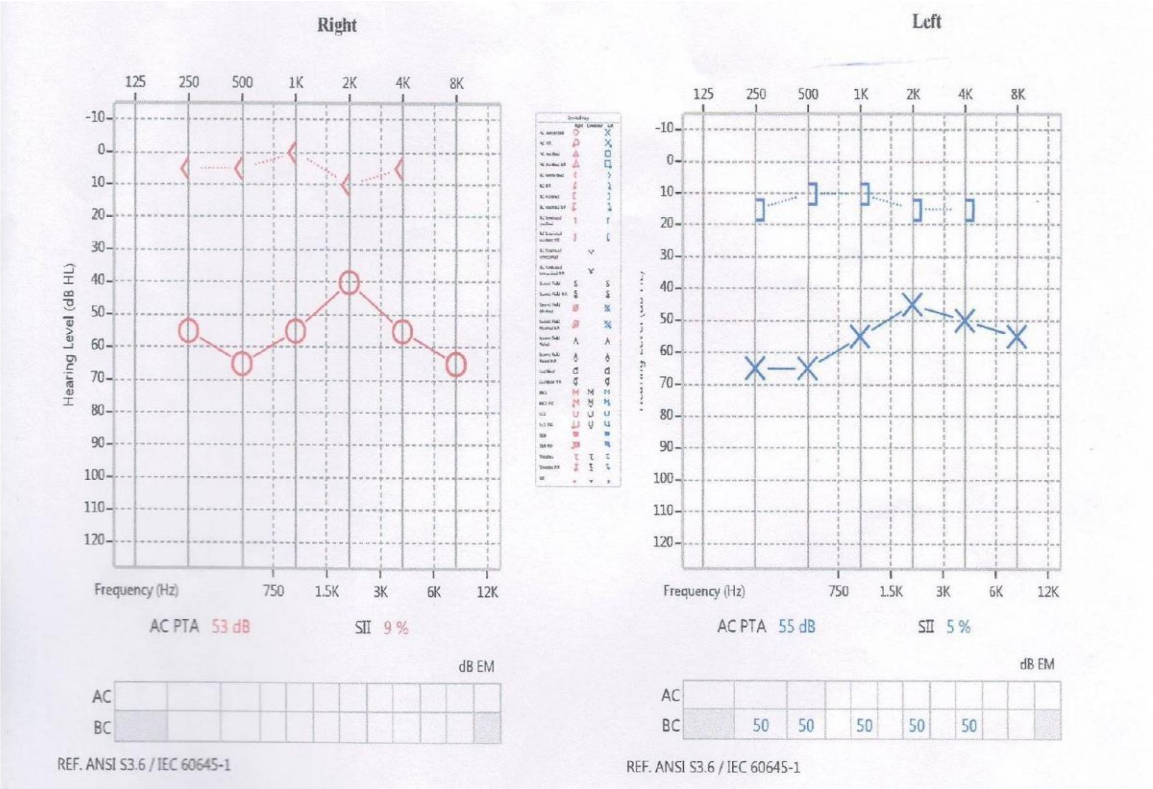
1) Dotted lines represent the bone conduction function or the cochlear/neural function of the ear (BC). It is normally less than 25 dB.
2) Straight lines represent the air conduction function of the ear (AC).It is normally less than 25 dB.
3) Left sided sensorineural hearing loss because the AC and BC thresholds are below normal.



Scenario 2

A 59 year old lady came to OPD with decreased hearing on both sides. She gave a history of mucopurulent ear discharge from the past 30 years, which was present on both sides, episodic in nature, associated with Upper respiratory infection. Her audiometry report showed the following reports:

1) What is the inference from report?
2) What does the gap between air conduction and bone conduction curves represent?



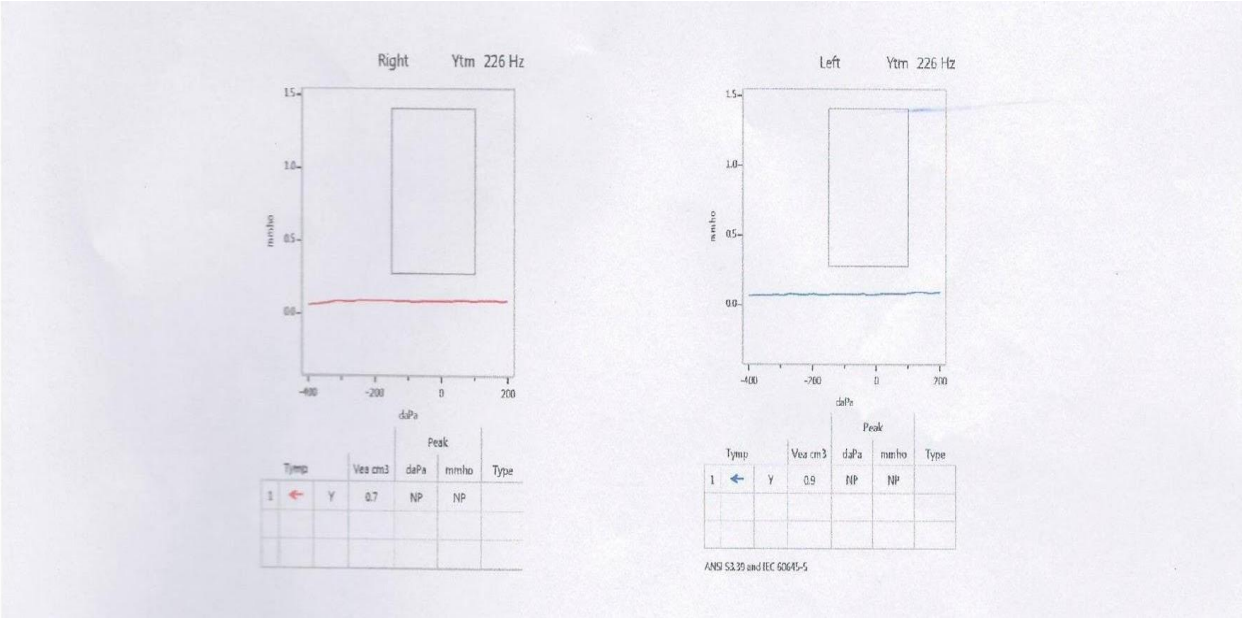
Answers:

1) Bilateral conductive hearing loss
2) Gap between the air conduction and bone conduction curves represents the amount of conductive hearing loss.

Scenario 3

A 6 year old child presented with complaints of decreased hearing and ear block for 3 weeks. This was associated with nasal block and nasal discharge, which was treated with antibiotics and decongestants. Tympanometry showed the following results:

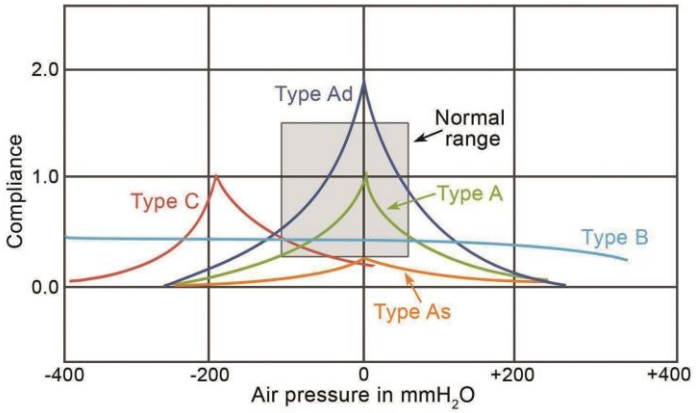
1) What is the inference from the tympanogram?
2) What are the types of tympanogram?
3)



Answers:

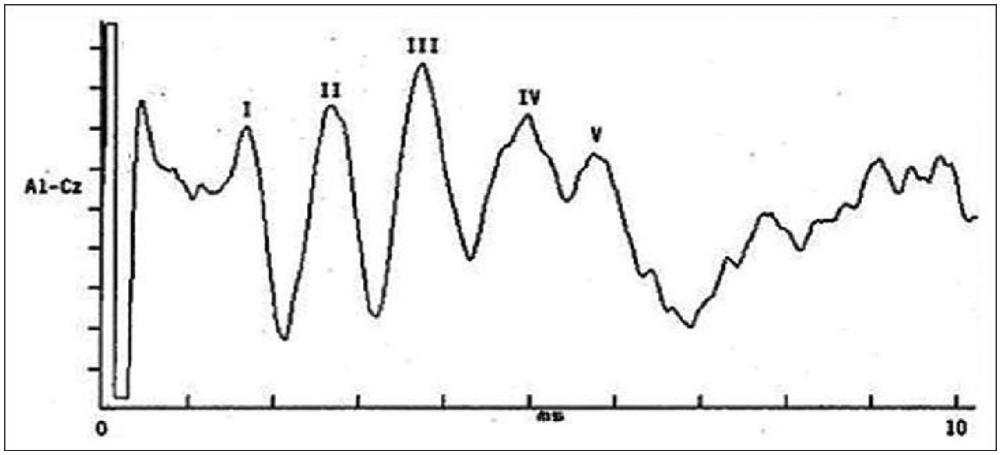
1) Flat curve on tympanometry is b type, which shows that there is fluid in the middle ear
2) 5 types of tympanogram

1) Type A - peak at near 0 pressure, seen in normal ear
2) Type As - peak is at 0, amplitude of peak is low, seen in otosclerosis, tympanosclerosis
3) Type Ad- peal is around 0, peak is abnormally high, system is more compliant than normal, seen in ossicular discontinuity or flaccid Tympanic membrane
4) Type B- Flat curve, no pressure changes , seen in impacted wax, serous otitis media, perforated tympanic membrane
5) Type C - peak shifted to negative, seen in Eustachian Tube dysfunction and early secretory otitis media



Scenario 4:

1) What audiology evaluation does this waveform represent?
2) What does each waveform represent?
3) Which wave is used for clinical applications?



Answers

1) Brainstem Evoked Response Audiometry (BERA)
2) Waveforms that develop as sound passes through the auditory pathway from I to VII.

Wave I - Distal portion of vestibulocochlear nerve

Wave II- Proximal vestibulocochlear nerve as it enters the brainstem

Wave III- Cochlear nucleus of Pons

Wave IV - Superior Olivary Complex

Wave V- Inferior Colliculus

Wave VI, VII - Medial Geniculate Body

3) Wave V is the most often analysed for clinical applications.