**Summary and Conclusion**

The facial nerve is one of the most sensitive structures in the temporal bone that can be easily injuried during middle ear surgeries.

Knowledge of the surgical anatomy of the facial canal is essential in middle ear surgery. In many common otologic approaches, surgeons incur a high risk of iatrogenic injuring the facial nerve. Anatomic landmarks offer to the surgeon different options when change of the facial nerve occurred by iatrogenic, traumatic, inflammatory and other reasons.

In this study, fifty adult Egyptian human temporal bones were conducted to many measurements and observations aimed to know the lengths, diameters and direction of the three segments of the facial bony canal and know the distance between the segments of the facial bony canal and important landmarks.

The following measurements had been taken: the length of the labyrinthine, tympanic and mastoid segments of the facial bony canal, diameter of the three segments, first and second genu angles, the distance between the tympanic segment and cochleariform process, the distance between the tympanic segment and oval window niche at the level of its posterior edge, the distance between second genu and pyramidal eminence, the distance between second genu and lateral semicircular canal, the distance between mastoid segment of the facial bony canal and sigmoid sulcus, the distance between mastoid segment and tympanic annulus at 9th o'clock position and the distance between lateral semicircular canal and tegmen tympani.

The mean length of the labyrinthine segment of the facial bony canal was 5.006 ± 0.95mm. Its mean diameter was 0.766 ± 0.062mm.

The mean length of the tympanic segment was 11.71± 1.22mm. Its mean diameter was 1.44 ± 0.46mm.

There was dehiscence in the tympanic segment of the facial bony canal in 14% of cases.

By examination of the tympanic segment, its direction was horizontal in most cases but it was oblique sloping downward and backward in 30% of cases.

The mean length of the mastoid segment was 13.06± 1.59mm and its mean diameter was 2.34± 0.895mm.

The chorda tympani nerve runs laterally in the middle ear, between the incus and the handle of malleus , In all specimens the chorda tympani nerve began its tract in an ascendant way at an average distance of 7.2 ± 2mm from the stylomastoid foramen.

The mean value of the first genu angle was 65.64̊ ± 11.41.

In this study, the second genu angle was 118.32 ± 17.73̊.

The mean distance between the tympanic segment of the facial bony canal and oval window niche at the level of its posterior edge was 2.47± 0.698mm.

While the mean distance between the tympanic segment and the cochleariform process was 1.5 ± 0.68mm.

The mean distance between the second genu and lateral semicircular canal was 1.53 ± 0.499mm.

While the mean between the second genu and pyramidal eminence was 2.08 ± 0.547mm.

The mean distance between the mastoid segment and the sigmoid sulcus was 5.37 ± 2.13mm.

While the mean distance between the mastoid segment and the tympanic annulus at 9th o'clock position was 2.08 ± 0.8mm.

The mean distance between the uppermost point of lateral semicircular canal and tegmen tympani was 5.895± 2.83mm.

**CONCLUSION:**

It is possible to conclude that it is necessary to know the whole anatomy of the facial bony canal and surrounding important structures.

There are important surgical landmarks must be taken in consideration during middle ear surgery to recognize the facial nerve when the course of the nerve is interrupted by any pathologies, these surgical landmarks are the cochleariform process, lateral semicircular canal, pyramidal eminence, oval window niche and tympanic annulus. So, it is important to know the mean distance between the facial nerve and these important landmarks.