

**INTRODUCTION  
AND  
AIM OF THE WORK**

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## 1- INTRODUCTION

Modern otologic microsurgery requires a thorough appreciation of middle ear surgical anatomy, especially the anatomy of posterior tympanic cavity, because many irregular recesses are found here, and this area is often involved by pathological processes (Saito et al, 1979)

Diseases such as adhesive otitis media, cholesteatoma, and neoplasms may extend into the sinus tympani, and therefore, this area must be addressed in order to eradicate the pathology (Pickett et al, 1995).

*Leutje, (1994)*, had admitted that the anatomy of sinus tympani has an important significance with respect to the management of cholesteatoma (*Leutje, 1994*).

If the sinus tympani must be explored the anterior approach via the meatus must be used. The pyramidal eminence and the components of the styloid complex may require extensive removal, and in some temporal bones removal of the bone anterior to the descending facial canal may fail to expose the full limits of this sinus (Proctor, 1969)

Reports in the literature emphasize that access to the posterior recesses of the middle ear is imperative when diseases involve the retro-tympanum (Jansen 1968, Jako 1966, Smyth et al, 1971, Farrior 1966, Goodhill 1973, Donaldson et al 1971 and Proctor 1969).

On the time that there are several normal anatomical variants of temporal bone (Potter, 1973) , the High resolution computed tomography (HR-CT) can clearly exhibit the fine details of middle and inner ear (Virapongse et al, 1982, and Valvassori et al, 1988), and it is playing an increasing role in the evaluation of temporal bone disorders with many reports documenting its usefulness in cholesteatoma (Johnson et al, 1983), malignant tumors, congenital anomalies (Swartz et al, 1985), acoustic neuromas and fractures of temporal bones.

The posterior or mastoid wall of the tympanum can be considered to be a completely closed by irregularly but symmetrically shaped bone up to the level of the pyramidal eminence. Above the pyramidal eminence lies the aditus ad-antrum and anteriorly lies the attic. The wall lies between the annulus tympanicus and medially placed labyrinthine capsule (Proctor,1969). It is a complicated structure consisting of several ridges and depressions, among which the sinus tympani .

## **2-AIM OF THE WORK**

The aim of this study is to detect the presence of any normal variation between the anatomical structures of the posterior tympanum namely the sinus tympani , the facial nerve canal , the posterior semi circular canal and the jugular bulb, and their relationships to the surrounding structures by both high resolution computed tomography and anatomical sectioning . And to see whether the high resolution computed tomography is highly representative to the anatomical facts or not.

The following points will be assessed :-

- 1-The depth of the sinus tympani
- 2-The distance between the posterior semicircular canal and the facial nerve canal
- 3-Whether the jugular bulb is encroaching on the middle ear cavity or not.
- 4-The distance between the sinus tympani and the facial nerve canal.