Study on Mastoid Part of Temporal Bone in Man

Thesis Submitted for the Partial Fulfillment of the Master Degree in Anatomy

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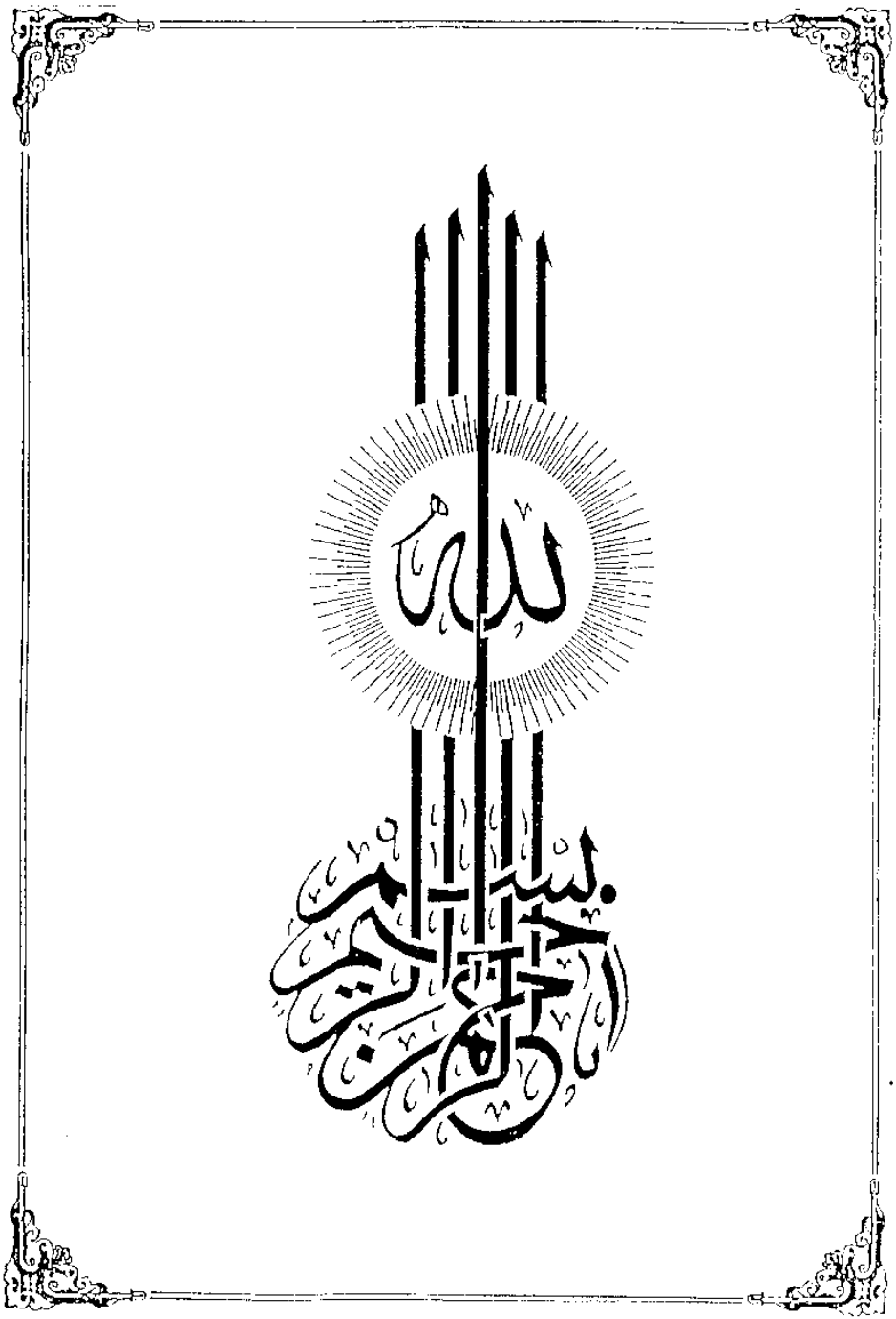

بسم الله الرحمن الرحيم

"و لقد خلقنا الإنسان من سلالة من طين*

ثم جعلناه نطفة في قرار مكين*ثم خلقنا النطفة علقة فخلقنا

العلقة مضغة فخلقنا المضغة عظاما فكسونا العظام لحما ثم

أنشأناه خلقا آخر فتبارك الله أحسن الخالقين*

ثم إنكم بعد ذلك لميتون"....

صدق الله العظيم

سورة المؤمنون (الآيه ١٢-١٥)

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Nagwa Ebrahim

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INTRODUCTION AND AIM OF THE WORK

The mastoid air cell system acts as a surge tank of air available to the relatively small middle ear cavity. This is the current concept about the physiologic role of it. During intervals of Eustachian tube dysfunction, the tympanic membrane and ossicular chain perform their roles finely, due to this gas reservoir in the mastoid air cells. In cases of small or absent mastoid air cell system, this could be harmful for the middle ear cavity during Eustachian tube dysfunction ***(Cummings, Fredrickson, Krause, Harker and Schuller, 1993).***

The pneumatic cells of the temporal bone are distinctive features that offer surgical access to the structures within and adjacent to this bone and have a considerable influence on the development and course of the suppurative diseases ***(Shambough and Glasscock, 1990).***

The exact pattern and degree of pneumatization vary greatly among temporal bones but with a tendency toward symmetry between two sides of a particular individual ***(Shambough and Glasscock, 1990).***

Ballantyne and Groves (1979) stated that the majority of the mastoid (80%) are of the cellular type, but in some persons it is either of the diploiec or sclerotic types. ***Albrecht (1930), Wittmaack (1931), Diamant***

and Dahlberg (1945) and Turmakin (1959) put many theories to explain why some mastoids are not cellular.

The air cells of the temporal bone develop as out-pouchings from the tympanum, epitympanum, antrum and Eustachian tube ***(Shambough and Glascock, 1980).***

Rudin, Svardsudd and Tibblin (1987) dedicated the controversy about the course of the development of mastoid pneumatization was either due to hereditary or environmental factors.

Recently, ***Turgut and Tos (1992)*** showed that inflammation of the middle ear inhibits the growth of the mastoid process and reduces its length.

Reviewing literature, it was found that little attention was given to the development of the mastoid air cells of the temporal bone. Also the relation between inflammatory middle ear diseases and mastoid pneumatization is not settled yet.

Knowing the important function of the mastoid air cells in hearing mechanism, so the aim of the present work is to study variation of mastoid pneumatization among Egyptian population. Also its relation to age and to some inflammatory middle ear diseases (chronic suppurative otitis media and cholesteatoma).
Plain X-ray, dissection of dried temporal bone specimens and computerized tomography technique (CT) were used in the study.

Review of Literature