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BONY SWELLINGS OF MAXILLA

"Essay"

Submitted for partial fulfillment of Master Degree
in Otorhinolaryngology

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بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا إلا ما علمتنا إنك
أنت العليم الحكيم﴾

«صدق الله العظيم»
(سورة البقرة - آية ٣٢)

ACKNOWLEDGEMENT

I would like to express my deepest gratitude and respect to ***Prof. Dr. Maged El-Shennawy,*** *Professor of Otorhinolaryngology, Faculty of Medicine, Cairo University, Under whose supervision I had honour to proceed with this work, for his continuous help and encouragement in initiating and completing it.*

I would like to express my profound thanks to ***Dr. Sherif Adly Raafat,*** *Assistant Professor of Otorhinolaryngology, Faculty of Medicine, Cairo University, for his generous and continuous supervision, valuable help, advice and support through the course of this work.*

My sincere thanks and utmost appreciation are presented to ***Dr. Nevin Ismail Ramzy,*** *Lecturer of Pathology, Faculty of Medicine, Cairo University, for her kind, patient and careful supervision, and great help in accurate review of this work with much encouragement and advice.*

This WORK Is
Dedicated To
My Wife

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I - AIM OF WORK

The objective of the work is to review various pathological conditions that can cause bony swellings of the maxilla and how to reach diagnosis based on clinical examination, radiology and biopsy and how to manage each case stressing on the common swellings.

II - DEVELOPMENT AND ANATOMY OF MAXILLA

DEVELOPMENT AND ANATOMY OF MAXILLA

A - Development of Maxilla

The nose develops from the cranial ectoderm above the stomatodaeum, where paired thickenings "olfactory or nasal placodes" become apparent on the infralateral sides of the head region in the fourth intrauterine week when the embryo has a crown-rump length of 5.6 mm (Streeter, 1945). The placodes are convex but with the proliferation of the surrounding mesenchyme, accompanying the formation of the medial and lateral nasal folds, the placodes soon come to lie in depression which deepen sufficiently to form the olfactory pits, the medial nasal folds fuse to form a central elevated part known as the frontonasal process. With further growth of the nasal folds, each olfactory pit becomes deeper, forming a nasal sac (Streeter, 1948).

The maxilla is derived from the first branchial (mandibular) arch, which develops during the first embryonic month into a maxillary process (Tobin, 1973).

In the 12.5 mm embryo, the maxillary processes grow anteriorly and medially below the developing eye across the inferior border of the nasal pits, to fuse anteriorly with the medial nasal folds and the fronto-nasal process. The nasal pits then become closed inferiorly and form the primitive nasal cavity.

Then the tissues for development of the alveolar process of maxilla are formed.

The primitive palate is formed at this stage by proliferation of mesoderm in the free lower border of the fronto-nasal process.

During the growth of the palate the primitive nasal cavity extends upwards. On its lateral surface a series of ectodermal elevations appear. These fuse to form three main elevations into which mesenchyme migrates and later differentiates into osteogenic tissue. The three elevations become the superior, middle and inferior turbinates. The maxillary sinus is the first para-nasal sinus to appear and is initially represented as a depression in the nasal wall below the middle turbinate. The depression rapidly becomes a groove, grows laterally and invades the body of maxilla it may begin in the early postnatal period but usually occurs in late foetal life (Tobin, 1973; Hamilton & Harrison, 1979).

At birth it is very small but its expantion is due to endosteal resorption associated with bony deposition at the maxillary tuberosity and to the eruption of teeth. At birth, the horizontal (transverse and anteroposterior diameter) of the maxillae are both greater than the vertical.

Until late in the fourth foetal month, the developing maxillary sinus remains internal to the nasal capsule as a shallow oblong pocket at the inferolateral surface of the ethmoid infundibulum. But during the fifth foetal month, the shallow primordium of the maxillary sinus grows beyond the nasal capsule into the spongy bony mass of the maxilla (Blitzer et al., 1985). It expands into the maxilla during the first five to ten years of life (Tobin, 1973)

The floor of the sinus remains above the level of the floor of the nose up to 8 years of age. It is only after eruption of the permanent dentition in the 12th year and the development of the alveolar process that the maxillary sinus descends below the level of the floor of the nose.

So, in adults the vertical diameter is the greatest, owing to the development of the alveolar process and increase in the size of the sinus (Suenaga, 1980).

The growth of the maxillary sinus governs the eruption of the