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MANAGEMENT OF SALIVARY GLANDS TUMOURS

Essay

Submitted for Partial Fulfilment of

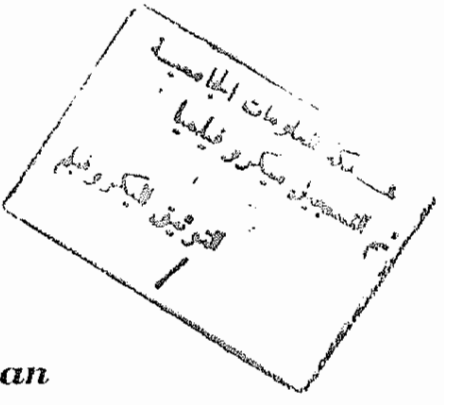
Master Degree in

General Surgery

BY

Ahmed Hamdy Ibrahim

M.B., B.Ch.



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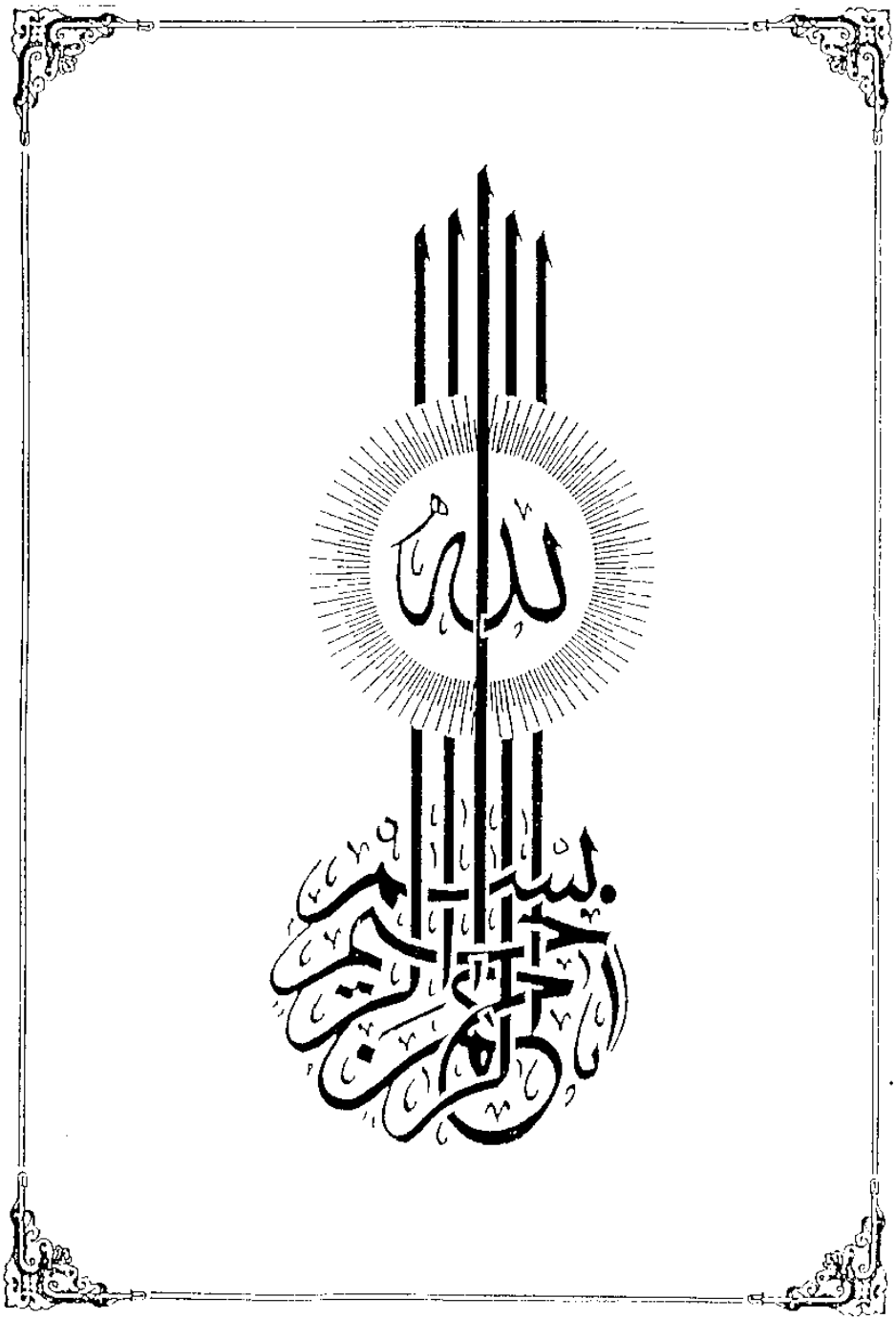
1994



ACKNOWLEDGEMENT

I wish to express may sincere appreciation and gratitude to **Prof. Dr. Alaa Osman,** Ass. Professor of General Surgery, Faculty of medicine Ain Shams University. **Prof. Dr Alaa Osman** in the first place suggested and supervised this work, subsequently gave sincere and helpful advice and encouragement during its preparation, and finally devoted full time in reading and editing the manuscript of this essay.

I am also indepted to **Dr. Ashraf Omar** Lecturer of General Surgery, Faculty of Medicine, Ain Shams University, for his co-supervision, valuable suggestion and unfailing efforts during the preparation of the manuscript.

My thanks also are extended to all those who helped me during this work to complete it to its final shape.

Ahmed Hamdy Kamel

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INTRODUCTION & AIM OF THE WORK

INTRODUCTION

Salivary glands surgery especially parotid is becoming increasingly commonly performed by otolaryngologists as well as by plastic, maxillofacial and general surgeons. This is mainly due to the increased incidence of salivary glands tumours of which the parotid is the largest and most important gland. Tumous of salivary glands in general constitute about 5% of head and neck tumours and affect major salivary glands 5 times more often than minor salivary glands. The incidence of malignancy among salivary glands tumours varies inversely with the size of the gland and about 25% of parotid tumours are malignant. Since 70% of salivary glands tumours occur in the parotid gland and 3/4 of these are benign so the majority of salivary glands neoplasms are benign. (Byrne, 1988).

The salivary glands are usually divided into two groups, the major salivary glands, which are the paired parotid, submandibular and sublingual glands, and the minor salivary glands, which are located in the mucous membrane of the respiratory tract and upper digestive tract. Approximately 80 to 85 percent of all salivary gland neoplasms occur in the parotid gland, 10 to 15 percent in the submandibular gland and approximately 5 percent in the sublingual and minor salivary glands. In term of malignancy, in general, as the size of salivary gland decreases, the incidence of malignancy increases.

Another peculiar behavior of the salivary neoplasms is that one summarized by Ackerman (1962): "The usual tumour of salivary gland is a tumour in which the benign variant is less benign than usual benign tumour and the malignant variant is less malignant than the usual malignant tumour".

AIM OF THE WORK

The aim of this essay is to present an update comprehensive review of the anatomy, pathology, investigations, diagnosis and treatment of the salivary glands tumours of which the parotid is the largest and most important gland, in an attempt to clarify the different surgical managements and the safe procedures one has to adopt.

SURGICAL ANATOMY OF THE SALIVARY GLANDS

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Anatomy of the salivary glands:

The salivary glands may be divided into two groups : The paired major salivary glands, parotids, submandibulars and sublinguals, and the minor salivary glands. The major salivary glands are located outside the oral cavity proper and are connected to it by a complex ductal system. The minor salivary glands are situated beneath the mucosa of the oral cavity and empty their secretions directly through short rudimentary ducts. Structurally the major salivary glands are compound tubuloacinar in type, the minor salivary glands are single tubular and tubuloacinar. (Gates and Johns, 1980).

A. Parotid gland :

This is the largest of the salivary glands. It has a lobulated appearance, and irregular in confirmity with the space it occupies which is roughly that between the ramus of the mandible, the mastoid process and the styloid process. The gland is covered by a capsule, the parotid sheath, a prolongation upwards of the investing fascia of the neck. The sheath covering the superficial surface of the gland is strong and offers considerable resistance to swelling of the gland. (Gates and Johns 1980).

The body of the gland fills the space between the ascending ramus of the mandible and the surface presented by the external acoustic meatus and the mastoid process, its contours moulded to the irregularities of the bed in which it lies. The anterior border of the bed is formed by the projection backwards of the ascending ramus with masseter covering its superficial surface and medial pterygoid covering it deeply. The outer surface of the external acoustic meatus, bony and cartilagenous, forms the posterior border of the bed above, continuing below into the mastoid process and for a short distance along the anterior border of the sternocleidomastoid. The floor is formed by the styloid process with its attached muscles and the posterior belly of digastric. These structures separate the gland from the internal jugular vein, the internal carotid artery and cranial nerves, IX X XI and XII. (Mc Gregor, 1992).

The gland has several extensions beyond its main borders. It extends forwards both superficial and deep to the mandibular ramus, overlying part of masseter and medial pterygoid. Just below the condylar neck, above the attachment of medial pterygoid to the bone, where the bone and muscle separate, the gland extends into the gap between the two. Below the meatus, it extends into the outer surface of the mastoid process and over the anterior border of the stermocleidomastoid muscle. (Mc Gregor, 1992).

There is no natural plane of cleavage between the gland and the skin capable of being exploited surgically. The gland is also firmly fixed to the structures which border it both anteriorly and posteriorly, with particularly firm fibrous attachments to the external acoustic meatus, the mastoid process and the fibrous sheath of sternocleidomastoid. In contrast, its attachments to the structures lying deep to it are generally much looser. (McGregor, 1992).

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Intraglandular relationships might appear to be more relevant in the surgery of simple tumours, while the anatomy of the gland as it relates to its surroundings, is

variable. Knowledge of both intra - and extraglandular relationships still forms the basis of the proper surgical management of both simple and malignant tumours. (Mc Gregor, 1992).

Proper surgical anatomical knowledge of the parotid gland is necessary for the surgery of the tumours which involve the parotid gland to be both safe and effective, knowledge of its relationships to the structures which surround it and those which pass through it, is essential. These relationships are of greater than average complexity, involving structures of importance, confined within a small space with fixed boundary walls. To know them in the normal subject is necessary, but equally important is to be aware, how they can be distorted by the presence of tumours, both simple and malignant (Mc Gregor, 1992).

Surfaces of the parotid gland:

The parotid gland possesses three surfaces namely, lateral, anterior and posterior. The superficial or lateral surface, which is the external part of the superficial leaf of the gland, is being triangular in shape and bounded by the posterior border which reaches the external acoustic meatus and the sternocleidomastoid muscle and extends inferiorly to the angle of the mandible and the posterior belly of the digastric muscle. The superior border which lies below the

zygomatic arch, generally matching the horizontal plane of the arch. The anterior border which ascends irregularly to meet the superior border, thus forming the apex of the gland. The apex is directed forwards, rests upon the masseter muscle and when prolonged as an accessory lobe, may follow the duct to the buccinator muscle. (Anson and McVay, 1986).

The superficial surface (lateral surface) is covered with skin and the superficial fascia which contains the fascial branches of the great auricular nerve, the superficial parotid lymph nodes and the posterior border of the platysma. (Williams and Warwich, 1980).

The anterior (or antero-inferior) surface of the gland is moulded around the posterior border of the ramus of the mandible and the muscles which clothe the latter - the masseter laterally, the pterygoideus internus medially. Thus sulcus thereby produced in the anterior surface of the gland being, in some instances, a deep incisura, may continue posteriorly as the cleavage plane between the superficial and deep leaves (Anson and Mc Vay, 1984).

The posterior (or posteromedial) surface is in contact with the sternocleidomastoid muscle, the mastoid process of the temporal bone, the cartilage of the external acoustic meatus, the posterior belly of the digastric muscle, the