CLINICAL STUDY OF DIFFERENT TYPES OF CLEFT LIP AND THEIR SURGICAL TREATMENT

THESIS

SUBMITTED FOR PARTIAL FULFILMENT OF MASTER DEGREE IN GENERAL SURGERY (M.SC.)

BY

EL SAYED ALI EL SAYED BOSELAH

M.B.B. CH. 1974

SUPERVISED BY

PROF. DR. MOHY EL DIN SIDKY

PROFESSOR OF GENERAL SURGERY

AIN SHAMS UNIVERSITY

AND

DR. REDA MAHMOUD MOUSTAFA

LECTURER OF GENERAL SURGERY

AIN SHAMS UNIVERSITY

FACULTY OF MEDICINE

AIN SHAMS UNIVERSITY

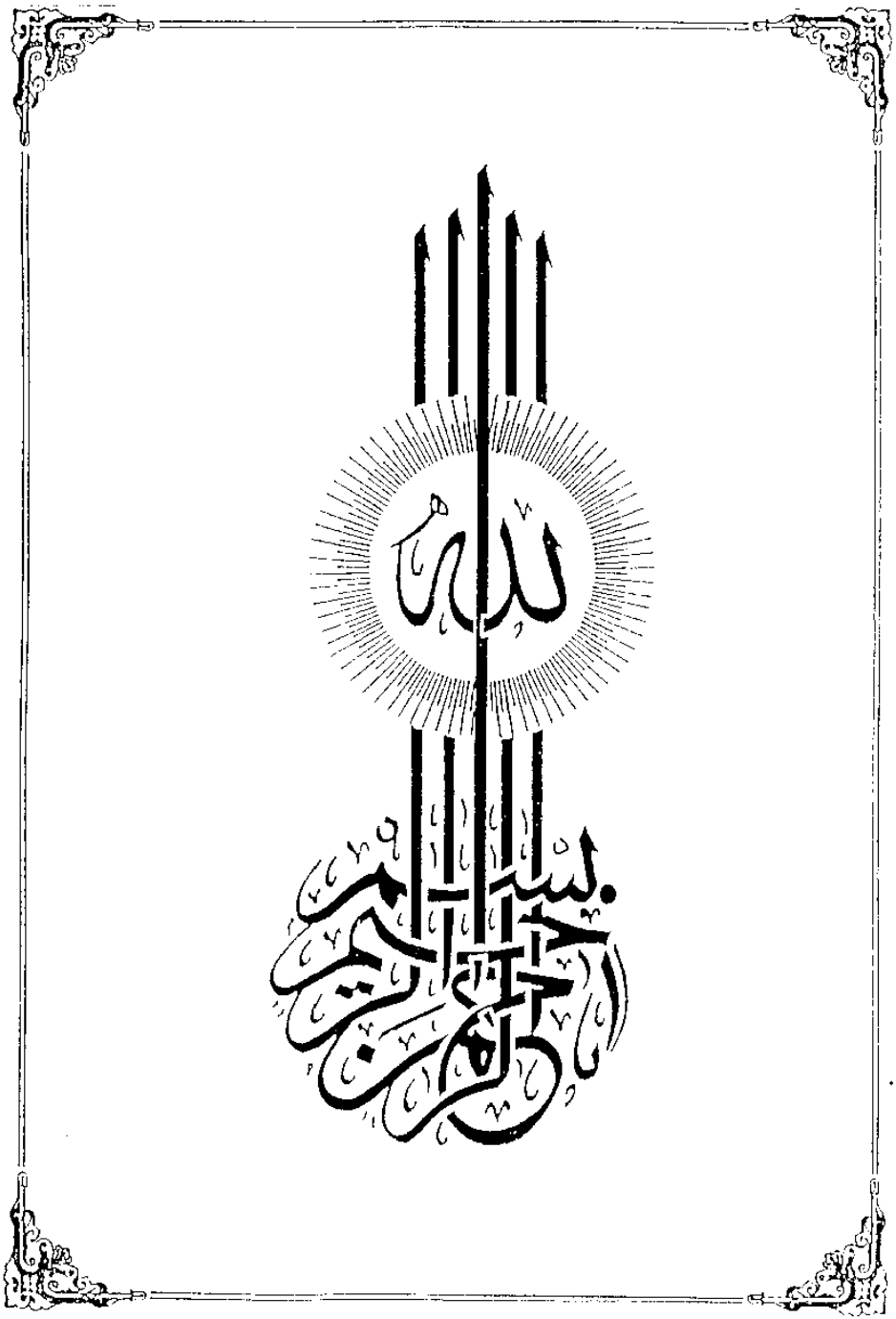
1982

ACKNOWLEDGEMENT

I am greatly indebted to Prof. Dr. Mohi El-Din Sidky Professor of General Surgery, Ain Shams University for his continuous encouragement, Scientific help and continuous guidance throughout this work.

I also, wish to acknowledge with gratitude the help of Dr. Reda Mahmoud Moustafa, Lecturer of General Surgery, Ain Shams University for his valuable advices.

Thanks are also expressed to Dr. Ahmed Abo El-Saud the head of plastic surgery department in El-Sahel Teaching hospital.



CONTENTS

I N T R O D U C T I O N

INTRODUCTION

Cleft lip is a relatively common congenital abnormality of the lip. A condition resembles the bifid lip of the hare (wild rabbit). It is more common in boys than girls and more common on left side and very rare on lower lip. (Abdalla M. Sobeih 1974).

Cleft of the lip is commonly associated with cleft of the palate, these two congenital anomalies are not separate from each other, they are actually grades of the same defect. Cleft of the lip has a disfiguring appearance to affected babies and also a mild affection on the function of the lips as mild difficulty in suckling especially in types associated with cleft of the palate, also there is difficulty in phonation.

For the above difficulties and disfigurment the aim of the present work is to study these different types of cleft lip and the proper surgical treatment.

In ancient times many congenital deformities including cleft lip and palate were referred to as an evidence of the presence of an evil spirit in the affected child. These

children were then often removed from the cultural unit and left to die (John Marquis Converse 1977).

Yperman (1293-1351) was a Flemish surgeon who appears to have written the first fully description of cleft lip and its surgical repair (John Marquid Converse, 1977).

Mirault (1844) introduced the modern crossflap technique of lip closure, this technique remained popular and advocated during the twentieth century by Blair and Brown (1930).

Further modification of cleft lip closure was described in 1884 by Hagedorn who advised a rectangular flap technique to prevent linear contracture. This procedure appears to have led to the operation of Le Mesurier in (1949).

During this period Z-plasty techniques were also used to reliefe the tendency to linear scar contracture.

- - -

EMBRYOLOGY

Normal development of the upper lip and palate:

In mammals development of the upper lip and the primary palate is intimately associated with the formation of the primitive nasal cavities. In late somite embryos the nasal primordiae appear in the ectoderm as bilateral circumscribed thickenings or placodes covering the ventri-lateral surfaces of the forebrain. As a result of proliferation of adjacent mesenchymal cells the nasal placodes become depressed below the surface and form nasal pits. Active proliferation of the surrounding mesenchyme converts the nasal pit into a slit-like pocket or sac which opens anteriorly between the median and lateral nasal processes and ends blindly behind.

During the six week the nasal fin becomes attenuated and its posterior end is reduced to a thin epithelium remnant called the bucconasal membrane. The membranes soon rupture brinning the primitive nasal cavities into communication with the buccal cavity via the primitive posterior nares. Anterior to the bucconasal membrane the

nasal fin breaks down gradually and mesenchymal cells from the premaxillary and maxillary growth centres intermingle beneath the primitive nasal cavities and in the upper lip anteriorly. The two premaxillary centres merge together to form the primary palate.

After the development of the lip and primary palate these follows an interval varying between 3-14 days before the palatal processes unite to form the secondary palate, thus completing the separation of the oral and nasal cavities. During the seventh week of human development the maxillary mesenchyme lining each dorsolateral wall of the buccal cavity forms a well-marked ridge, the palatal process. In the eighth week, the processes move upwards and medially around the sides of the tongue and assume a horizontal position above its dorsal surface. When both processes are elevated their medial edges come into contact in the midline of the nasal cavity where they fuse with each other and with the ventral surface of the nasal septum. Ossification occurs in the processes soon after they have fused together (J.W.S. Hurds 1970).

NORMAL ANATOMY OF THE LIP

ANATOLY

Normal anatomy of the lips:

The lips and cheeks are composed mainly of muscle and fat covered with skin and lined with mucous membrane. The space that separates the lips and cheeks from teeth and gums is the vestibule of the mouth. (G.J. Romanes 1975).

Muscles of the face: (Fig. 1)

Embryologically the muscles of the face "facial expression muscles" are developed from the mesoderm of the second pharyngeal arch from which they migrate widely to their adult positions. They are supplied by the nerve of the second arch, the seventh cranial (facial) nerve. They are morphologically specialized members of the panniculus carnosus. There is no deep fascia in the face. Functionally the muscles are differentiated to form groups around the orifices of oribit, nose and mouth which are guarded by eye lids, nostrils and lips and there is a sphincter and opposing dil or arranged peculiar to each. The purpose of the facial muscles is to control these orifices. The varying expressions so produced on the face are side effects.

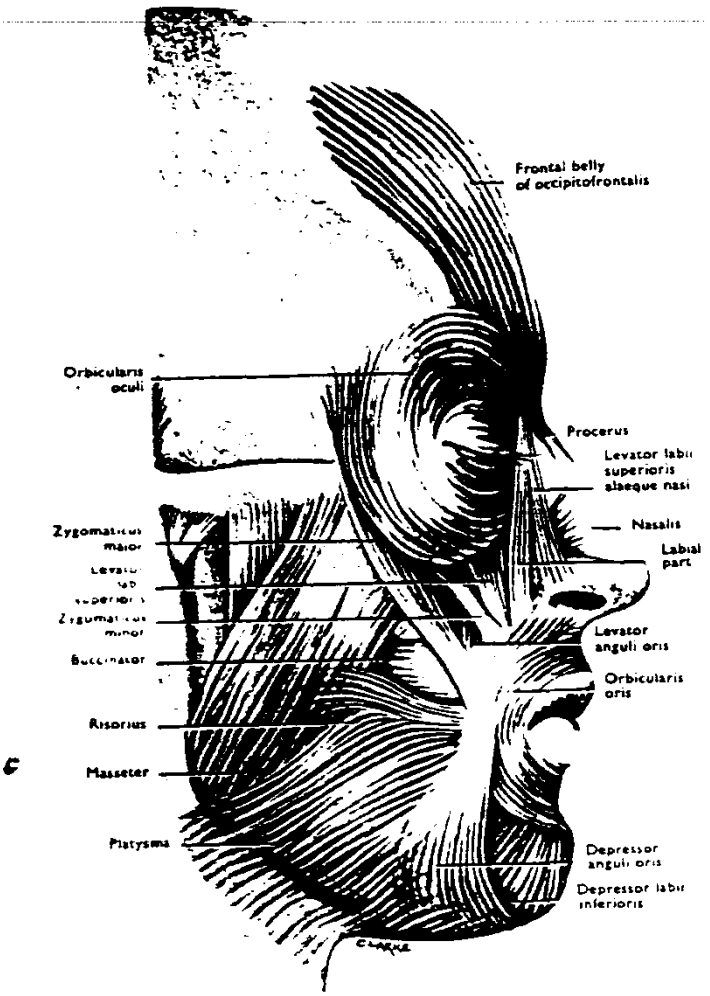


Fig. 1. The facial muscles.

The muscles of the lips and cheeks:

The sphincter is the oribicularis oris, the dilator mechanism consists of the remainder of the facial muscles which radiate outwards from the lips like the spokes of a wheel.

Orbicularis oris Muscle: (Fig. 2)

The muscle consists of fibres proper to itself attached near the midline to upper and lower jaws and fibres that are added to these from the dilator muscles.

The intrinsic fibres are attached to bone near the midline and well away from the alveolar margin.
The incisive and mental slips curve around the angle of the mouth in a loop on either side. They are the deepest of all the orbicularis fibres and the mucous membrane of the lip is firmly attached to them.

The bulk of the orbicularis muscle is formed of extrinsic fibres, most of these come from the buccinator.

The fibres of buccinator converge towards the modiolus. At the modiolus they form a chiasma.

The upper most and lower most fibres pass straight on into their respective lips, while the middle fibres decussate,

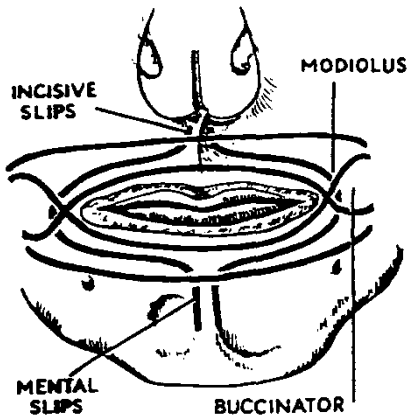


Fig. 2. The formation of orbicularis oris by intrinsic and extrinsic fibres.

the upper fibres of buccinator passing into the lower lip, the lower into the upper lip.

Contraction of the orbicularis oris causes a narrowing of the mouth, the lips becoming pushed up into the smallest possible circle (the whistling expression).

The Buccinator Muscle:

The muscle arises from both jaws opposite the molar teeth and form the pterygomandibular raphe. The buccinator arises just beyond the bucco-gingival fold. The muscle arises from a fibres band that extends from the tip of the hamulus to the nearest part of the tuberosity of the maxilla. This band is called the pterygomandillary ligament.

The muscle converges on the modiolus where its fibres of origin from the raphe decussate, the mandibular fibres pass medially without decussation into the upper and lower lips respectively. The muscle is pierced by the parotid duct opposite the third upper molar tooth and by the buccal branch of the mandibular nerve which supplies it with proprioceptive fibres.

The buccinator is the muscle of the cheek pouch and is lined by adherent mucous membrane.