NEONATAL ABDOMINAL WALL DEFECTS

ESSAY

Submitted in Partial Fulfilment for Master Degree

in General Surgery.

BY

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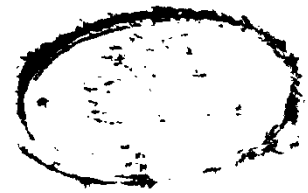

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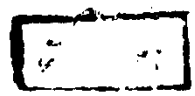

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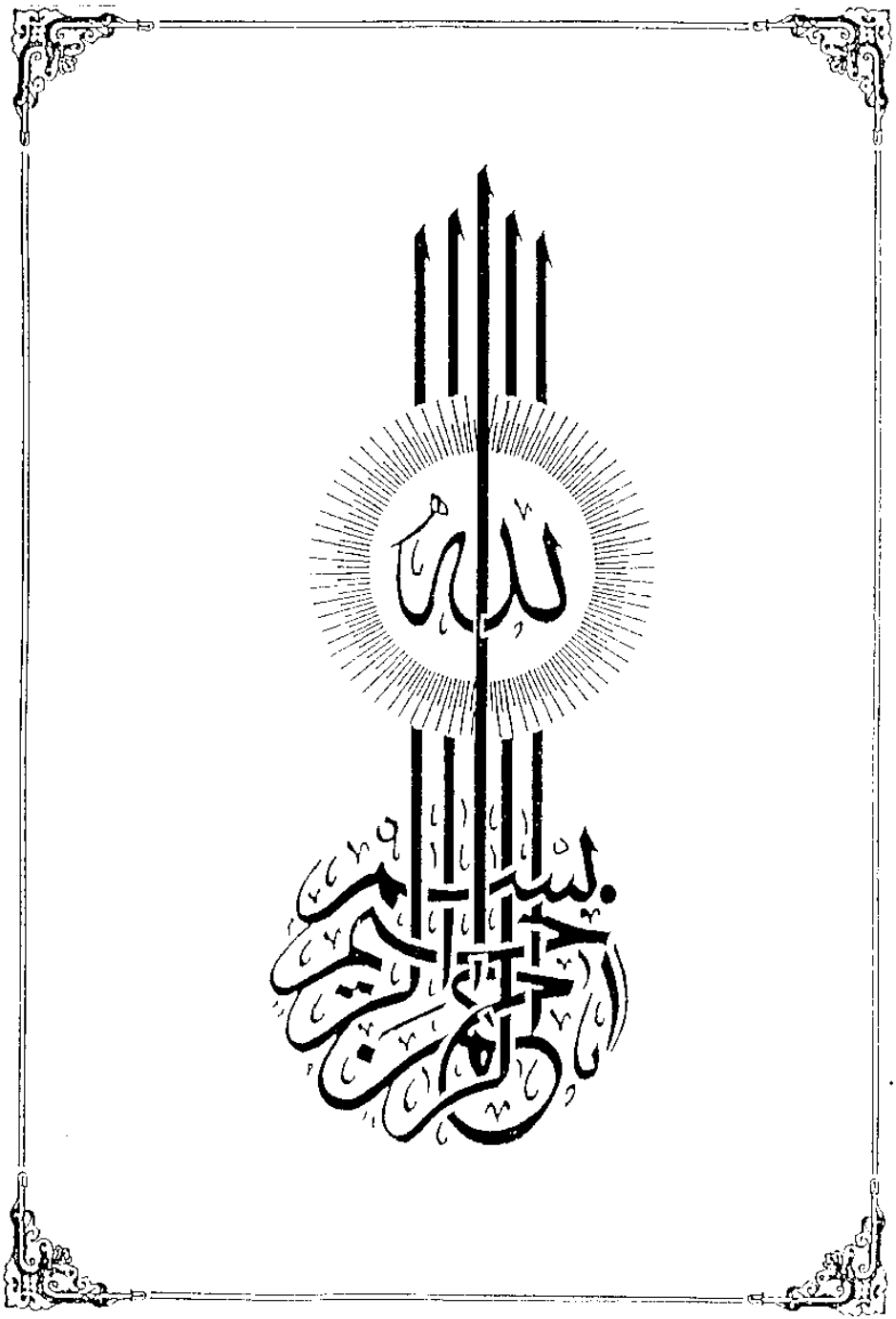

بسم الله الرحمن الرحيم

سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

صَدَقَ اللهُ العَظِيمُ

To .....

My PARENTS

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PROTOCOL OF ESSAY

Submitted for Partial Fulfilment of M.S. Degree in General Surgery.

1. **Subject:**

" Neonatal Abdominal Wall Defects"

2. **Name of the Candidate :**

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4. **Aim of the work :**

This essay aims to study of Neonatal abdominal wall defects and associated anomalies.

5. **Contents :**

- Anatomy of Ant. abd. wall.
- Physiological basis.
- Associated anomalies.
- Methods of diagnosis.
- Methods of Investigations.
- Managment.

CONTENTS

INTRODUCTION

INTRODUCTION AND HISTORICAL NOTE

Omphalocele, gastroschisis and umblical cord hernia are the surgically correctable neonatal defects of the anterior abdominal wall.

Each of these defects has a distinct embryologic basis that results in a characterestic clinical picture. **(Klein M.D. et al., 1981).**

Gastroschisis is a full thickness cleft in the abdominal wall resulting from a developmental failure of one of the lateral abdominal plates of the somatopleure.

The abdominal defect characteristically located to the right of the intact umblical cord **(Fonkalsrud E.W. 1980).**

Omphalocele represents a defect of the umblical ring and medial segments of the two embryonic lateral abdominal wall folds.

This defect is usually occur in the third week of fetal life and ranges from 4 to 10 centimeters in size.

The sac if present is consisting of an inner layer of peritoneum and an outer layer of amnion. **(Grosfeld et al., 1981).**

Umblical cord hernia looks very likly omphalocele but the defect is smaller usually less than 4 cm and the sac contains only intestine.

It results later in embryologic development after completion of a normal formation of the umblical ring. **(Klein et al., 1981).**

As early as 1557 an infant with an omphalocele was described as "a monstrous" baby with its intestine within a sac hanging from an opening in the abdomen.

Later in **1733, James Calder** described a new born with gastroschisis in whom most of the intestine were lying on the abdomen with the naval found intact an inch and half below the defect.

In 1807 surgical closure of a small omphalocele was first reported by **Sir Astley Cooper.**

Large omphalocele noted to contain the liver within the sac, remained a fatal condition until the early 1900 s.

Primary closure of large omphalocele often resulted in a marked increase in intraabdominal pressure and compression of the inferior vena cava.

Gastroschisis remained fatal until **1943** when **Watkins** reported the first successful surgical closure of the defect.

Gross in 1948 reported a two-stage closure for large omphalocele.

Advances in the 1950, and 1960s included antibiotics, manual stretching of the abd. wall and use of protnetic materials.

Also in last decade advances in parenteral hyperelimentatio for nutritional support and pediatric ventilators for increased intra abdominal pressure in primary closure.

Finally the development of the neonatal intensive care unit has provided careful monitoring of these infants. (Schwaitzberg et al., 1982).

ANATOMY OF THE ANTERIOR ABDOMINAL WALL

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The anterior abdominal wall is formed of :-

- Skin
- Nerve supply
- Arterial supply
- Superficial fascia
- Muscles
- Veins and lymphatics.

Skin :

It shows anatural lines of cleavage and a horizontal lines arround the trunk which are important clinically since an incision through it will heal as a narrow scar.

Superficial fascia :

It may be devided into a superficial fatty layer and a deep membranous layer.

The fatty layer is continous with the superficial fat over the rest of the body.

The membranous one fades out over the thoracic wall above and inferiorly it passes on to the front of the thigh where it fuses with the deep fascia.

In the midline it is not attached to the pubis but forms a tubular sheath for the penis in the male or clitoris in female.

Nerve supply :

The cutaneous nerve supply are derived from the anterior

rami of the lower six thoracic and first lumber nerves.

The thoracic nerves are represented by the lower five intercostal and the subcostal nerves.

The lumber nerve is represented by the iliohypogastric and ilioinguinal nerves.

The dermatome of T_7 is situated in the epigastrium just over the xiphoid process.

That of T_{10} include the umblicus and that of L_1 lies just above the inguinal ligament and the symphysis pubis. **(Richard S. Snell, Clinical Anatomy, 2 ndedition 1981).**

Muscles of the anterior abdominal wall :

The three muscle layers of the body wall are separate in the flanks, where they are known as :-

The external oblique, internal oblique and transversus abdominis muscles.

They fuse together in the ventral midline to form the rectus abdominis muscle.

External oblique muscle :-

It arises by 8 digitations one from each of the lower eight ribs at their anterior angles.