Preperitoneal Repair of Inguinal Hernia

An Essay

Submitted For Partial Fulfilment

of Master Degree in General Surgery

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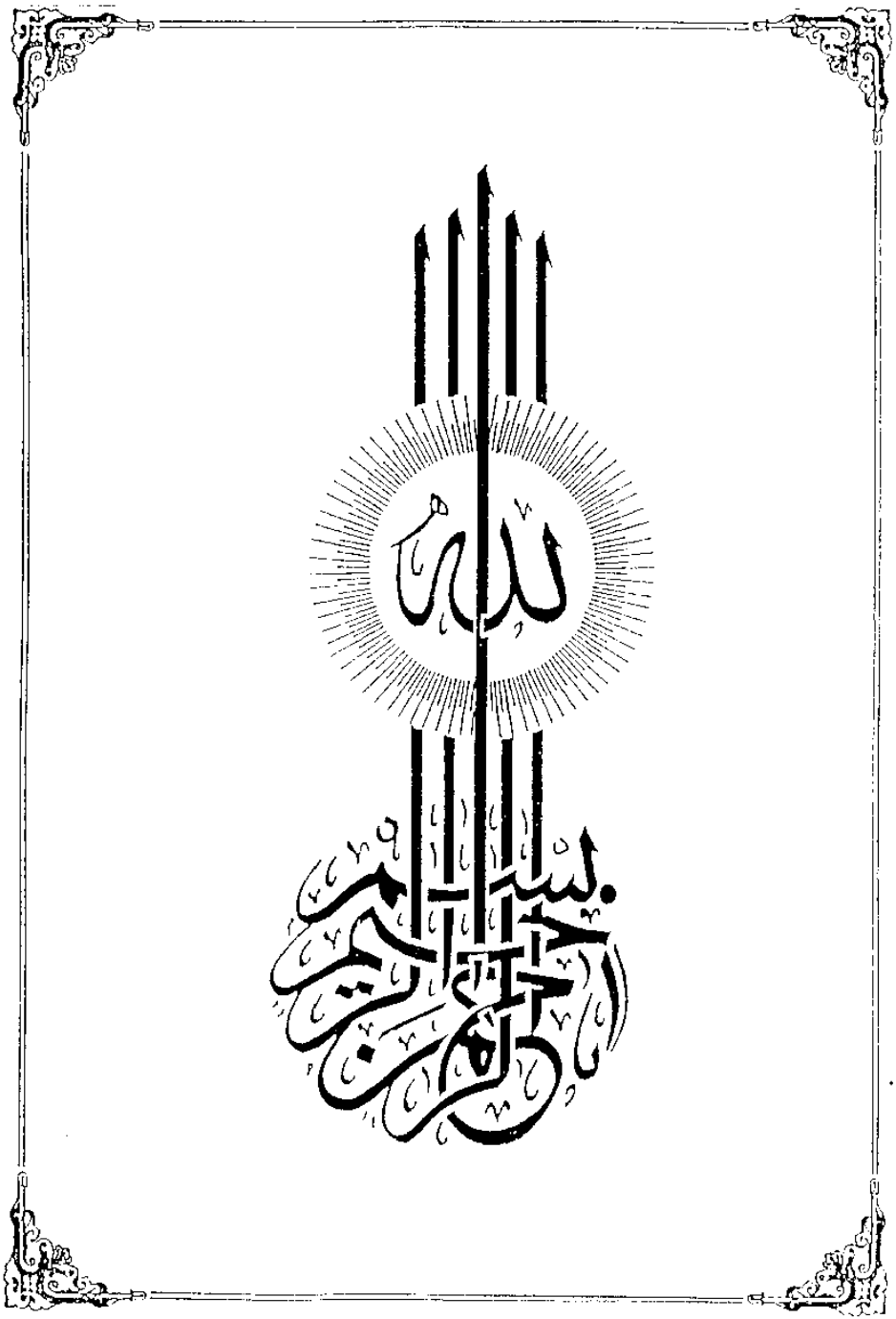
1994

بسم الله الرحمن الرحيم



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Acknowledgement

- I would like to express my deep appreciation and sincere gratitude to Prof. Dr. Adel Abdel Kader Mostafa & to Ass. Prof. Dr. Ismail Abdel Hakeem Radwan who have offered me the chance, beneficial advice with helpful directions and encouragement, also I wish to express my sincere thanks to Dr. Hossam El Azzazi for his assistance in establishing this work.

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INTRODUCTION

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Operation for the radical cure of inguinal hernia is one of the oldest of surgical procedures and many methods have been employed.The greatest advance in the operation resulted from Bassini's work, who first described and modified the repair of inguinal hernia.

The principles under lying the radical cure of all inguinal hernias are the same, namely, the complete isolation and removal of the sac and the restoration and strengthening of that part of abdominal wall through which the hernia has protruded. To attain these objects very numerous plans have introduced. Successful repair depends largely on the surgeon,s ability to determine and correct the definitive defect at the time of operation by meticulous gentle dissection subsequently using the local tissues to repair the defect without tension.

A variety of prostheses have come into use in repair recently. Of these, the most popular seem to be nylon matrix, prolyne and tantalum mesh especially in the preperitoneal repair of inguinal hernia.

The preperitoneal type of repair became widely used now especially for recurrent or bilateral hernia repair. This procedure was definitely described by Cheatle in 1920.

AIM OF THE WORK

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- Evaluation of technique of preperitoneal repair of inguinal hernia through Pfannensteil incision.

EMBRYOLOGY AND ANATOMY OF INGUINAL CANAL

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I- Embryology of inguinal canal

The open processus vaginalis of the peritoneum of the inguinal canal is believed to be a companion of the gubernaculum in the eighth week of fetal life. The primative testis and kidney lie close together near the pelvic brim in early fetal life. As the trunk elongates the kidney migrates up. The testis follow the anchoring gubernaculum down and behind the processus vaginalis in the third trimester. The common origin and late migration clarify the puzzling close origin from the aorta of the arterial supply to the midely separated kidney and testis. The timing of these developments explains the indirect hernia associated with an undescended testicle, in which the peritoneum descended but the testis did not follow. The processus vaginalis remains in communication with the peritoneal cavity until the infant approaches term, Then begins to obliterate in response to unknown influences. Sixty percent of infants still have open processi. This percentage decreases through childhood, but the processus remains occultly open in (25% of adult males).

(Shackelford's, 1985)

II- Anatomy of the inguinal ligament

The inguinal ligament is that portion of the aponeurosis of external oblique which is rolled posteriorly and superiorly on itself and forms agroove to hold the spermatic cord, the medial portion of folded back ligament is the lacunar ligament of Gimbernat which is attached to the pubic tubercle and cooper's ligament for approximately 1 cm, it has a free lateral crescentic margin. It should be recognized that the inguinal and lacunar ligaments, are simply the lower free edge of external oblique aponeurosis and are made up of parallel aponeurotic fibers of the external oblique aponeurosis and at no place is the ligament more than one aponeurotic fiber thick. The curving of the lower edge of the external oblique aponeurosis backward and slightly cephalad is simply due to our erect posture and to the casual abserver this area woud appear to be a ligamentous thickening. This is not true, however, and the inguinal ligament is a free margin, largely held in position by the continuity of the innominate fascia of obdominal wall (fascia covering the external oblique aponeurosis). Becoming the fascia lata of the thigh. If one removes the innominat fascia from the external oblique aponeurosis it then becomes apparent that the inguinal ligament in truth, a free margin in it's medial

two thirds and that as it from the fascial attachments there are no muscles that originate or inserted into the inguinal ligament the lateral one third to one fourth of the inguinal ligament is not a free margin this is due to the insertion of some of the external oblique aponeurotic fibers into the fascia lata the lacunar ligament is commonly figured as a fan, Shaped expansion of medial end of the inguinal ligament but if the fascial investement is removed it is then obvious that the lacunar ligament is nothing more than parallel fibers of the inguinal ligament. In route to an insertion on cooper's ligament. This concept is difficult for the surgeon and anatomist to understand, however if one cuts the inguinal ligament and rotates it 180 degrees so that the twist is removed it is readily apparent that the inguinal and lacunar ligaments are composed of a single layer of parallel fibers of external oblique aponeurosis.

(Anson & Mcvay surgical anatomy 1984)

**** Attachment of the inguinal ligament***

It extends from the anterior superior iliac spine to the pubic tubercle medially. It's edge is rolled inwards to form a gutter, the lateral part of this gutter gives origen to part of the internal oblique and transversus abdominis muscles, it is attached to the fascia lata of the thigh, when the thigh is extended the fascia lata pulls inguinal ligament downwards into a gentle convexity, the lacunar ligament lies just above and lateral to the public tubercle it is an oblique V-shaped gap. This gap extends down to the pubic crest, medially to the tubercle and to the pectineal line, the other limbe of the V-shaped is attached to the medial part of inguinal ligament and it's crescentic free edge is the medial margin of femoral ring. The reflected part of the inguinal ligament is some fibers from the pubic tubercle traced upwards and medially behined the spermatic cord, to interdigitate in the linea alba with those of the opposite side. It is not important surgically, but it is in fact a reinforcement of the attachment of the aponeurosis of the opposite side.

(Last's anatany regional and applied, 1990)