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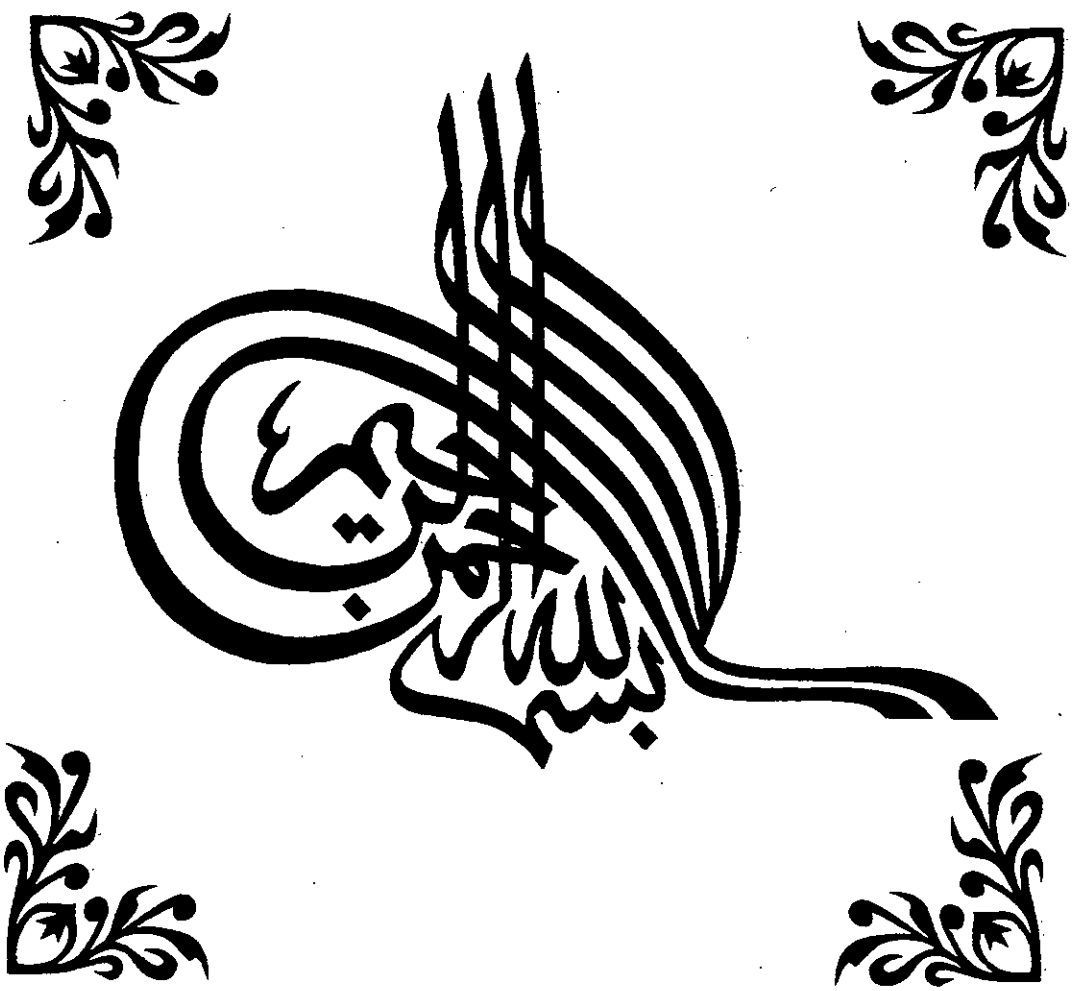
بسم الله الرحمن الرحيم

EVALUATION OF THE MESH PLUG REPAIR FOR RECURRENT INGUINAL HERNIAS

Thesis

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IN SURGERY

BY

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CONTENT

CHAPTER I

Introduction

INTRODUCTION

Anatomical Consideration:

Proper understanding of the anatomy of inguinal region is essential for adequate inguinal hernia repair.

The groin is formed of three layers and transversalis fascia. Each layer is formed by a muscle and its aponeurosis invested by a fascia. The superficial layer is formed by the external oblique muscle and its fascia, the middle by the internal oblique and its aponeurosis and its fascia and the deepest by the transversus abdominis muscle and its fascia. [1]

The deepest lamina is the most important in the development and repair of inguinal hernia, while the other two layers, may be involved late in the growth of large inguinal Hernia. [1]

The external Oblique Muscle and Fascia

The inguinal portion of the external oblique is presented as external oblique aponeurosis. This aponeurosis forms a strong membranous structure. Its fibers pass downwards and medially. [1]

Variations in the size and distribution of the individual aponeurotic fibers are present. The fibers may be fine and hair-like in quality, in others, they may be band like strands. Usually the fibers are closely approximated but in some cases fusiform interspaces are present by divergence of the aponeurotic fibers. [4, 5]

The external oblique aponeurosis is functionally indifferent and present no barrier to the formation of inguinal hernia, since complete excision of this layer, as in radical groin dissection, does not result in hernia, if the transversus abdominis muscle and fascia are sutured to Cooper's ligament. [6]

The Superficial Inguinal Ring:

It is a triangular cleft between the aponeurotic pillars of the external oblique aponeurosis, just above and lateral to the pubic crest. The long axis of the triangle corresponds with oblique course of the fibers of the aponeurosis. It varies in size but in most cases it is wide enough to admit the examiner's index finger.[7]

It may be bilaterally unequal in size and commonly larger on the left side. It is smaller in females than in males due to the absence of the spermatic cord. [4, 7, 8] Fig. (1)

The inguinal ligament (Poupart's ligament) (Fig.1)

The inguinal ligament is the lower border of the aponeurosis of the external oblique muscle, and stretches from the anterior superior iliac spine to the pubic tubercle. They only have loose fascial attachment to the internal oblique, transversus and cremasteric muscle. It was the first ligament employed in the inguinal hernia repair and it has retained a prominent position in hernia surgery for long time. But this concept was changed by the fact that it is not the insertion of the posterior inguinal wall, and any repair applied to it will be superficial to the defect in the posterior wall. [5, 9] Fig. (1)

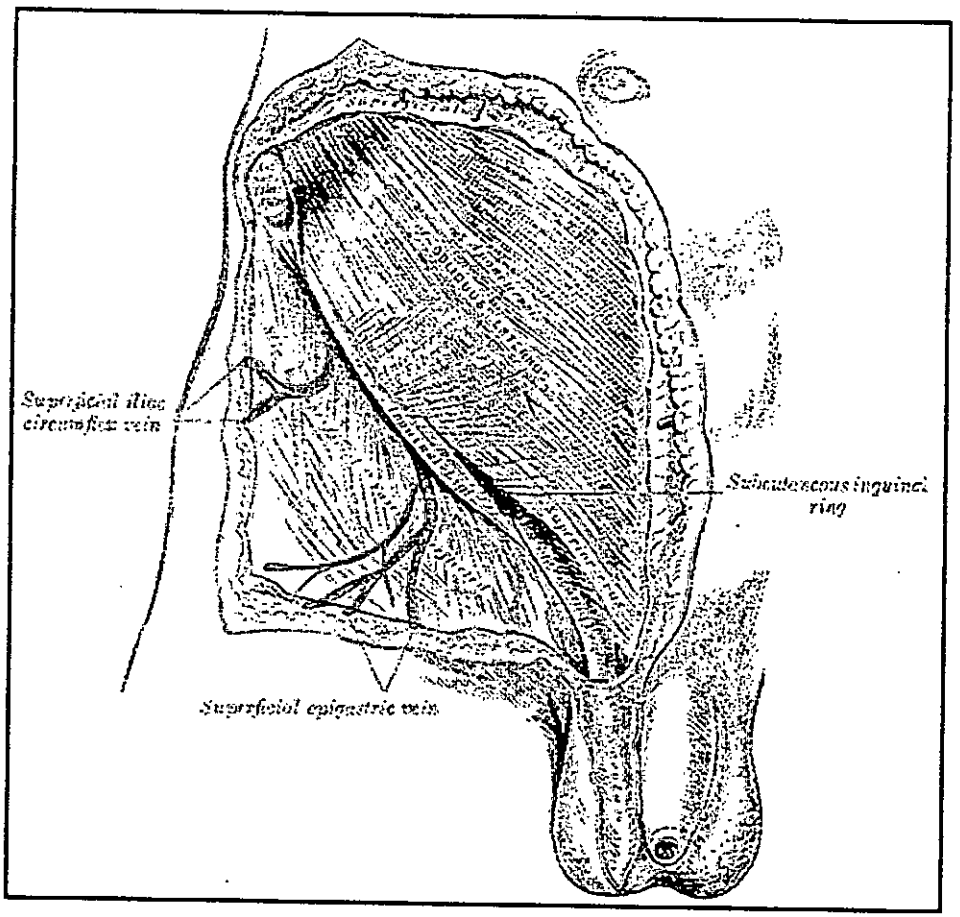

Fig. (1): The subcutaneous inguinal ring. [108]

The Internal Oblique muscle and fascia

The inguinal part of the internal oblique muscle takes origin from the iliopsoas fascia in common with the vertically disposed aponeurotic fibers of insertion of the external oblique muscle. As the muscle fibers pass medially to participate in the formation of the rectus sheath, they form an arch over the internal ring. The internal oblique is usually muscular until a short distance before the lateral border of the rectus sheath. Only in about 10% of the cases, the muscle forms its aponeurosis some distance lateral to the rectus sheath and it fuses with the transversus aponeurosis to form the conjoint tendon. So, the conjoint tendon is present in only 10% of the cases. [2,4,6,7,10]

The muscle is invested by a thin layer of fascia that can be hardly separated from it. [4]

The internal oblique muscle has minor or no role in the development of inguinal hernia. Although it is commonly employed in inguinal hernia repair, it is not basic structural unit and is not functional in inguinal hernia repair. [6]

The cremasteric muscle and fascia

It is no way functional and serves no purpose in inguinal hernia repair. The muscle must be excised to clarify the internal inguinal ring for its repair. [6, 11, 12]

Cooper's Ligament:

Cooper's ligament is one of the least variable structures in groin, remarkably constant. [3] it is a thick, broad, strong structure covering the superior pubic ramus from the pubic tubercle to the femoral vessels. The transversus abdominis muscle, the transversalis fascia and the iliopubic tract are attached to it. [6,7,13]

Cooper's ligament forms the inferior boundary of the direct inguinal hernia. Cooper's ligament is more suitable than the inguinal ligament for inguinal hernia repair. [1] Fig. (2)

The Transversus Abdominis Muscle and Fascia:

The inguinal part of the transversus abdominis muscle originates from the iliopsoas fascia in common with the corresponding part of the internal oblique muscle. As it passes medially, its muscle fibers turn aponeurotic for some distance before it enters in the formation of the rectus sheath, unlike the internal oblique muscle, which is usually muscular for a greater distance medially. [4,7]