Inguinal Hernia Repair Laparoscopic Vs. Open Technique

Thesis

Submitted for Partial Fulfillment of Master Degree in General Surgery

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List of Abbreviations

Abb.	Full term

TAPP.....*Trans-Abdominal Pre- Preperitoneal Approach*

TEP .....*Total Extra-Peritoneal Approach*

INTRODUCTION

Hernia is defined as an abnormal protrusion of an organ or tissue through a defect in its surrounding walls ***(Townsend et al., 2012).***

Hernias of the anterior abdominal wall include: inguinal and ventral hernias ***(Podolsky et al., 2010).***

Hernia repair is one of the most common operation performed by general surgeons. Despite the frequency of this procedure, no surgeon has ideal results, and complications such as postoperative pain, nerve injury, infection, and recurrence remain ***(Townsend et al., 2012).***

Inguinal hernia repair is the most frequently performed hernia operation in general surgery. The standard method for inguinal hernia repair had changed a little over a hundred years until the introduction of synthetic mesh. This mesh can be placed by either using an open approach or by using a minimal access laparoscopic technique. There is no apparent difference in incidence of recurrence between laparoscopic and open mesh methods of hernia repair. It was found that there is suggested less pain and numbness following laparoscopic repair. Return to usual activities is faster ***(McCormack, 2004).***

Laparoscopic techniques are being used increasingly in the repair of abdominal hernias and offer the potential benefits of minimal access surgery, possibly a lower recurrence rate and lower cost according to a randomized controlled study conducted by ***Olmi et al. (2007).***

They are effective for the vast majority of patients with primary or recurrent hernias and results in low recurrence rates, with high patient satisfaction scores ***(Hwang et al., 2009).***

However, operation time is longer and there appears to be a higher risk of serious vascular injuries in less experienced surgeons ***(McCormack, 2004).***

Therefore, surgeons repairing abdominal wall defects should be familiar with both laparoscopic and open approaches to hernias to offer the patient the most appropriate repair technique on the basis of unique patient factors and hernia defect characteristics ***(John et al., 2014).***

Aim of the Work

To evaluate and compare the open and laparoscopic techniques for inguinal hernias repair as regard their effectiveness, safety, benefits, morbidity and mortality.

Chapter 1
ANATOMY OF THE INGUINAL CANAL

This canal represents the oblique passage taken through the lower abdominal wall by the testis and cord in male, the round ligament in female. The canal is 1.5 inches (4 cm) long. It passes downwards and medially from the internal to the external inguinal rings and lies parallel to and immediately above, the inguinal ligament ***(Ellis, 2006).***

In the new born child, the deep ring lies almost directly posterior to the superficial ring so that the canal is considerably shorter at this age. Later, as the result of growth, the deep ring moves laterally fig.(1) ***(Snell, 2008).***

The deep inguinal ring is an oval opening in the fascia transversalis, lies about 1/2 inch (1.3cm) above the inguinal ligament midway between the anterosuperior iliac spine and the symphysis pubis. Related to it medially are the inferior epigastric vessels, which pass upward from the external iliac vessels. The margins of the ring give attachment to *the internal spermatic fascia* (or the internal covering of the round ligament of the uterus) ***(Snell, 2008).***

The superficial inguinal ring is a triangular-shaped defect in the aponeurosis of the external oblique muscle and lies immediately above and medial to the pubic tubercle. The margins of the ring, sometimes called the crura**,** give attatchment to the Spermatic fascia ***(Snell, 2008).***

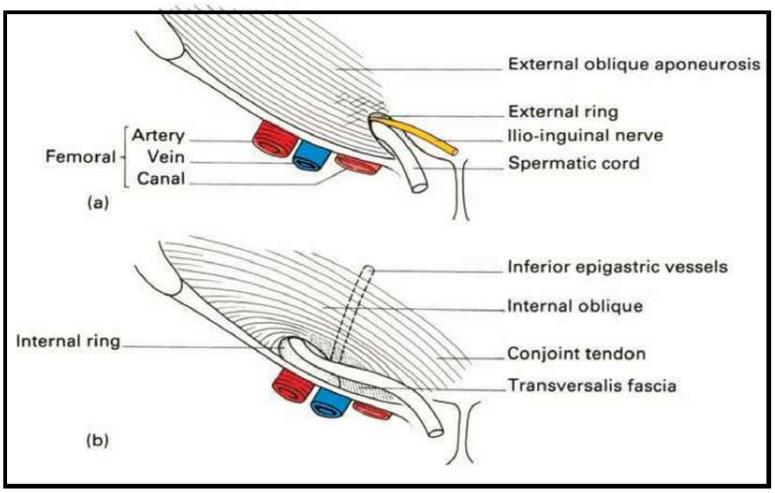

Fig. (1): The right inguinal canal (a) with the external oblique aponeurosis intact, (b) with the aponeurosis laid open ***(Ellis, 2006).***

Walls of the inguinal canal:

The anterior wall is formed by the external oblique aponeurosis, assisted laterally by the internal oblique muscle. **Its floor** is the inrolled lower edge of the inguinal ligament, reinforced medially by the lacunar ligament. **Its roof** is formed by the lower edges of the internal oblique and transversus muscles, which arch over from in front of the cord laterally to behind the cord medially, where their conjoined aponeuroses, constituting the conjoint tendon, are inserted into the pubic crest and the pectineal line of the pubic bone. **The posterior wall** of the canal is formed by the strong conjoint tendon medially and the weak transversalis fascia throughout ***(Sinnatamby, 2011).***