PROLENE MESH PLUG REPAIR IN VENTRAL HERNIAS

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بسم الله الرحمن الرحيم

(وَمَا أُوتِيتُم مِنَ العِلمِ إلا قَلِيلاً)

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Abstract

Ventral hernias are a common surgical condition. Well known to be associated with occurrence of serious complications and usually appear during adulthood and are frequently associated with multiple pregnancies and obesity. Since surgery remain the only modality of treatment, an effective repair with low preoperative morbidity and recurrence rates should be performed.

This study included fifty patients male and female suffering from ventral hernias. And aimed to apply the rationale of mesh plug repair in groin hernia to ventral hernia repair techniques. Prolene mesh plug repair is an accepted alternative minimal tension method for ventral hernia repair with accepted complication rate.

Complications rate in the current study were (12%) and included 3 cases (6%) of seroma, one case (2%) of haematoma, one case (2%) of sloughing of flap and one case (2%) of deep venous thrombosis. Late complications involved one case of recurrence after one year of surgery in an average follow up to 18 months.

The current study results suggest that prolene mesh plug repair for ventral hernias, allow for the tri-dimensional repair of the anterior abdominal wall defect with minimal tension, safe, effective and technically feasible operation with reduced morbidity. It has a short learning curve and with improved technical skills. Results will have a better outcome. In this series the follow up period was short, and the size of the sample was small. However, it is hoped that publication of these data may encourage others to conduct further trials to validate the results.

Key words:

Prolene mesh - Mesh plug – Ventral hernia.

INTRODUCTION & AIM OF THE WORK

INTRODUCTION

Abdominal wall hernias are a familiar surgical problem. Millions of patients are affected each year. ***(Holzman et al, 2000).***

The term ventral hernia is applied to any protrusion through the anterior abdominal wall, with the exception those of the inguinofemoral region. Ventral hernias usually appear during adulthood and frequently associated with multiple pregnancies and obesity. ***(Askar, 1984).***

Ventral hernias are hernias involving the midline aponeurotic zone, (umbilical, paraumbilical, epigastric and hypogastric hernias), incisional hernia, Spigelian hernia, and port site hernia. ***(Converteny et al, 2003).***

Abdominal wall defects can be accompanied by a spectrum of symptoms up to profound peritoneal signs when strangulation occurs. The most common symptom is a heavy or dull sense of discomfort during straining or lifting. ***(George et al, 1986).***

Most hernias are diagnosed upon physical examination as a bulge at the site of the hernia increasing with coughing or straining. ***(Vanden Berg et al, 1999).***

The history of prosthetic repair in abdominal wall hernias began in 1844 by the use of silver wire coils placed on the floor the groin to incite an inflammatory fibrosis augmenting the repair. Many prosthetic materials have been tried in hernia repair, but the two most common in current use are Polypropylene mesh (PPM), and expanded Poly-tetra-flouroethylene (ePTFE). ***(Leber et al, 1998).***

Several hernia repair methods have been described. The use of synthetic mesh to achieve a tension-free repair has resulted in a significant reduction in post operative pain, in length of the recovery period, and in the number of recurrences. ***(Lowe et al, 2000).***

There used to be two repair options including inlay and onlay technique. In inlay technique, the mesh is sutured to the fascial edges while in onlay technique; the mesh is placed and sutured onto the anterior rectus sheath. Mesh plug repair has been used for inguinal hernia repair. ***(Burger et al, 2004).***

Lately, mesh plug hernioplasty started to gain attention in the US, and became the fastest growing hernia repair among the American Surgeons. ***(Rutkow et al, 1997).***

In mesh plug technique, a mesh plug was fashioned from a flat polypropylene mesh, a cone of polypropylene mesh was made by the operating surgeon, mesh of such a size that diameter of the cone was slightly greater than the size of the defect the shape of the mesh plug was maintained by one prloene suture placed through the mesh about one cm away from the apex of the mesh plug. The plug was then placed in the defect and fixed to the margins using either interrupted or continuous one prolene. ***(Rutkow & Robbins 1993; Sanjay et al, 2005).***

Hypothesis

Prolene mesh plug repair is an accepted alternative minimal tension method for ventral hernia repair with accepted complication rate.

The aim of work

Is to apply the rationale of mesh plug repair in groin hernia to ventral hernia repair techniques.

REVIEW OF LITERATURE

EMBRYOLOGY OF THE ANTERIOR ABDOMINAL WALL

The anterior abdominal wall form as a result of the rapid growth of the embryonic body and a simultaneous decrease in the growth of the body stalk. ***(Keith, 1988).***

A layer of ectoderm and mesoderm (Somatopleure) at first without muscle, vessels or nerves from the primitive wall. By the sixth week of intrauterine life the somatopleure is invaded by the mesoderm derived from the myotomes on either side of the vertebral column. The segmental pattern is lost and the mesoderm grows laterally and ventrally as a sheet, the leading edges of which will differentiate into the right and left rectus abdominis muscles. These muscles are at first widely separated. The remaining part of the mesodermal sheet splits into three layers, an external layer which will differentiate ventrally into the external oblique muscle and dorsally into the serratus muscle, middle layer which will form the internal oblique muscle and an inner layer which will become the transverses abdomininis muscle. All of these muscles are distinguishable by the seventh week of intrauterine life. ***(Skandalakis and Gray, 1996).***

In the infraumbilical region, the invasion of the somatopleure by the somatic mesoderm is preceded by a layer of mesoderm that arises from the primitive streak just behind the cloaca. This “secondary mesoderm” surrounds the margins of the cloaca and invades the abdominal wall caudal to the body stalk, separating the layers of ectoderm and endoderm of the cranial end of the cloacal plate. It provides primary closure of the body wall between the phallus and the body stalk and forms part of the musculature of the bladder. The secondary mesoderm is in position by the seventh week and is followed by the somatic mesoderm which fuses externally to it by the twelfth week. ***(Boyd, 1980).***