Basrah Journal Of Surgery

Bas J Surg, March, 14, 2008

ONLAY MESH IN THE MANAGEMNT OF LARGE OR COMPLEX INCISIONAL HERNIA

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Abstract

The aim of this study is to evaluate the use of onlay mesh in the management of large or complex incisional hernia. A prospective study of 80 patients with incisional hernia operated on at al-Sadr Teaching Hospital treated with onlay mesh between Jan 2001 to Jan 2006. Thorough history and physical examination was done, data sheet was designed include numerous factors that effect operative and healing process. Of 80 patients, 61.2% female &38.8 % male with median age 40.1 years for female & 53 years for male. Patients were with different associated medical problems. Main incision was lower midline incision 26.2% &main post operative complications was seroma 7.5% & wound infection 7.5% while recurrence of hernia observed in 2.5%.This study showed that, the big incisional hernias can be efficiently treated by the onlay positioning of polypropylene mesh.

Introduction

Despite adequate surgical techniques of wound closure & reduction of wound infection rate with the scientific use of antibiotic still there is large number of incisional hernias in surgical practice. Incisional hernia may occur in any area of any scar of previous abdominal operation[1].

These hernias can vary in size from very small to very large and it may be complex, in a way it consist of many defects or the defect surrounded by very thin or weak abdominal wall fascia[2,3]. Incisional hernias develop in up 2-20% surgical abdominal wounds[4]. The incidence depends on number of factors including old age, sex, obesity, bowel surgery, suture type, chest infection, abdominal distension, wound infection and tension created when sutures are used to close surgical wound may also responsible[5]. The problems arising from the surgical management of incisional hernias are often difficult to resolve. Various types of repair have been described both anatomical & prosthetic but the results have been disappointing with high incidence of about 30-50%[6-8]. The effectiveness of surgical repair of incisional hernias depends in part on reducing or eliminating tension at surgical wound. The tension free method used involves the permanent placement of surgical prosthesis or polypropylene mesh patches well beyond the edges of the weakened area of abdominal wall[9]. This study evaluates the use of onlay poly-propylene mesh in the management of larger or complex post operative incisional hernias.

Patients and Methods

A prospective study was conducted between Jan 2001 to Jan 2006 in Sadr

Teaching Hospital in Basrah involved 80 patients with incisional hernias to evaluate the use of large sheet of polypropylene mesh applied directly over the fascia for the treatment of large (more than 10 cm) or complex (multi-defects or weak fascia) incisional hernia. A data sheet was designed including age, sex, body mass index, address, number of previous operations, presence of chronic diseases affecting wound healing, operation time, intra &postoperative complications. For all patients we gave intraoperative antibiotic in form of 1 gram cephalothen & if there is sensitivity, an alternative antibiotic was given. For all patients two ready-vacuum drains were applied. Follow up for recurrence done at 6, 12 months &2 years. Patients informed to visit their doctor for any suspicious of recurrence.

All operations conducted under general anesthesia &after skin incision is made the dissection conducted beneath the subcutaneous fat directly over the fascia to prepare of mesh application from the subcostal region above to the inguinal margin below. The sac of hernia opened, excess margins removed, then the peritoneum & fascia were closed as single layer without tension & if required, part of the layer will consist of attenuated fascia or even peritoneum only, then mesh is applied and anchored. Meticulous hemostasis achieved. No specific postoperative instructions applied apart from fluid diet for the first 2 days of allowance. Postoperative antibiotics continued for 7 days

Results

Eighty patients with repaired incisional hernias studied, they were 49 females & 31 males with their median age was 40.1 years for female (age 20-55 years) & 53 for male (age 29-65 years) as shown in table I.

While table II show that obesity was the main clinical problem in 25% & diabetes in 16.2%.

Sex	No. of pts.	%	Age	Mean
female	49	61.2	20-55y	40.1y
male	31	38.8	19-65y	53y
total	80	100		

Table I: Gender and age distribution of the patients.

Associated clinical problems	No .of patients	%
Obesity	20	25%
hypertension	10	12.5%
Heavy smoker	8	10%
D.M	13	16.2%
Steroid used	6	13.7%

Table II: show the associated clinical problems.

The main previous incision was the lower midline incision 26.2%, while the long midline incision occur in 22.5%. The transverse incision occur in 12.5% as shown in table III.

The postoperative complications were seroma formation occur in 7.5%. Wound infection also occur in 7.5%, the chest infection occur in 5%.

Hematoma at the site of operations encounter in 2.5%. Only one case develops pulmonary embolism. These complications are shown in table IV.

Previous incision	No.of patients	%
Lower midline	21	26.5%
long midline	18	22.5%
Upper midline	13	16.2%
Right paramedian	11	13.8%
transverse	10	12.5%
oblique	7	%8.8
Total	80	100%

Table III: show the types of previous incision.

Postoperative complication	No. of patients	%
Seroma formation	6	7.5%
Wound hematoma	2	2.5%
Wound infection	6	7.5%
Chest infection	4	5%
Recurrence	2	2.5%
Pulmonary embolism	1	%1.2

Table IV: show the postoperative complication.

Discussion

Incisional hernias usually occur at or near the area of the prior surgical scar. Although most commonly occurring along midline incisions, ventrally any prior abdominal operation can subsequently develop an incisional hernia[1].

Midline incisional hernia have higher rate of recurrence if repaired using simple tissue to tissue or suture only technique under tension[10,11].

The use of prosthetic mesh repair of large incisional hernias is well established.

the mesh was associated with good elasticity, adequate strength, satis-factory tissue acceptance & minimal risk of infection[12].

In our study, the seroma occur in 7.5% of the patients & it usually occurs in obese patient & in extensive dissection. the formation of seroma was reported to be 4% by Molloy et al, that required repeated aspiration from dependant part.

Wound hematoma occurs in 2.5%, especially in large dissection or in early removal of suction drain.

Wound infection occur in 7.5% which was superficial and commonly occur in diabetic and low immunity patients that required local treatment and coarse of heavy antibiotics. The infection did not leads to the removal of mesh in this & other study[13,14] but it was a risk factor for recurrence. Therefore, the administration of broad spectrum antibiotic at the induction of anesthesia is recommended[15].

The recurrence rate occur only in 2.5% in obese patients with infection and in patient with previous trauma to the abdominal wall as the extent of the decreasing laxity of the tissue surrounding the hernia, which is influenced by retraction of muscle & scarification of tissue, may be more important than the actual size of the facial defect[8]. No enterocutaneous fistula observed in our study.

The use of onlay mesh does not require dissection of intermediate layers of abdominal wall which defiantly lower the incidence of postoperative wound infection ,also the risk of intestinal occlusion and bowel fistula ,that's may occur in the intraperitoneal position of the mesh[16]. Despite Vrijland et al also shows the enterocutaneous fistula is very rare after repair of incisional hernia with intraperitoneal placement of polypropylene mesh.

Conclusion & Recommendation

The use of tension free repair for incisional hernia is easy, effective procedure with good result outcome.

It also impotent to control body weight of the patients near ideal body weight. General health is to be considered for the patient to be a good candidate for mesh repair.

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