Repair of Incisional Hernia

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Incisional hernia is an iatrogenic hernia. Such hernias apart from discomfort can cause serious morbidity, such as incarceration (in 6-15% cases)[1,2] and strangulation (in 2% cases). We have conducted a retrospective study from 1994-2000 in PAF Hospital, Sargodha. Sixty patients (23M, 37F) were treated. Patients were available for follow up. The small hernias were repaired with Mayo technique using non absorbable (proline) suture. Medium and large size hernias were repaired with proline mesh. Size of the hernia was subjectively assessed by asking the patient to contract the abdominal muscles while sitting and standing and feeling the hiatus. If the margins of defect will come together there is very opportunity that repair with non-absorbable suture will succeed. If the defect is large and diffuse and if on examination the margins of defect can not be brought together it is best to replace the hiatus with a synthetic mesh[3].

Key words: Incisional hernia, prosthetic mesh, introduction

Incisional hernia develops in 11-20%[4,5,6] of patients after abdominal surgery, the incidence depends upon a number of factors including infection, old age, female sex, bowel and gynaecological surgery, and suture material used (Table 1). Seventy to eighty percent hernias occur within 2 years of surgery and 80-90% occur within 3 years[8,9,10] Repair of large incisional hernias is a difficult undertaking. Recurrence rates of up to 33% after first repair and 44% after second repair have been reported[9] most occurring within 3 years[9,10]. Numerous methods of repair have been described. Mayo type of overlap, use of fascial flaps with suture darns and the use of fascia with synthetic mesh (polypropylene or Marlix mesh, Mersilene or expanded polytetrafluoroethylene mesh). In a literature review Lot et al (1992) state that overlapping produce impressive results and that techniques combining fascia with mesh have the advantage of overcoming the excessive tesnion[13]. We describe our experience with a technique using fascia and polypropylene mesh originally described by Brouse and Huest (1979)[14]..

Method and patients

All patients received antibiotic prophylaxis (Inj. Ampiclox 1Gm Inj. Gentacin 80mg IV). All operations were performed under general anaesthesia. After skin preparation and draping the cutaneous scar was excised and hernia sac dissected to expose the circumference of abdominal wall defect. In the patients assigned to undergo Mayo's repair the deeper inferior edge was transposed with interrupted prolene stitches 2-3cm from the edge. The superficial superior flap was sutured over the inferior flap with continuous prolene 1 ligature In patients assigned to undergo repair with mesh the dorsal side of fascia adjacent to hernia was freed from underlying tissue by at least 2-4cm. A polypropylene mesh was tailored to the defect so that at least 2-4cm of the mesh overlapped the edges of the hiatus. The mesh was sutured with interrupted prolene stitches at staggered levels from the edge. In most of the cases peritoneal defect was closed with vicryl1. When difficulty was experienced in closing the peritoneum the omentum was sutured in between to minimize adhesion formation between intestine and the mesh. Two drains were inserted through separate stab incision and removed after 48 hours. Inj. Ampiclox 1Gm 6 hourly and Inj. Gentacin 80mg 8 hourly was given for 48 hours. Nasogastric intubation was done with all cases of large incisional hernias. The patients were evaluated at 1,3,6,12,24 and 36 months after surgery

Results

Postoperative complications are show in Table 2. Seroma formation was the commonest complication. Ten patients required repeat aspiration but all settled in 2 week's time. Wound haematoma developed in 2 patients, in one case it was large enough to necessitate exploration but no active bleed was found and further course remained uneventful. Two patients developed infection of the mesh. In both the cases infection was overcome by widely opening the wound, daily irrigation with saline, repeated dressings and appropriate antibiotics according to culture and sensitivity. In both the cases the mesh got covered with granulation tissue in about 6 weeks and residual defect was covered with partial thickness skin graft. Forty three patients were followed up for a median of 20.4 month (6-60 months).Out of 43 patients 20 had Mayo type of repair and there was 15% recurrence rate in 3 years. The remaining 23 patients had prosthetic repair and there was only4.4% recurrence rate in cases with prosthetic mesh.

Table 1. (n=30)

Complication	No.
Seroma formation	17
Wound haematoma	02
Superficial wound infection	04
Infection of the mesh	02
Urinary retention	05

Table 2 Risk factors of incisional hernia

Wound infection
Age over 60 years
Obesity
Wound closure with catgut suture
Experience of surgeon
Pulmonary disease
Postoperative abdominal distention
Chronic steroid therapy
Urinary tract obstruction

Table 3. Ideal body weight

For Women
A-100 pounds for the first 5 feet in height
B-5 pounds for each inch over 5 feet
IBW equal A plus B above
For Men
A-105 pounds for the first 5 feet in height
B – 6 pounds for each inch over 5 feet
LBW equal A plus B above

It is recommended that the patient should be no more than 20% above IBW for successful repair of incisional hernia.

Discussion

The use of prosthetic mesh to repair large incisional hernias is well established. Langer and Christiansen (1985) compared their results using primary repair with data using a mesh and suggested that the use of mesh gave a better repair with less recurrence[9]. Liakakos et al (1994) carried out a prospective comparison of primary closure against the use of mesh and showed that the recurrence rate was less with mesh at a mean of 7.6 years of follow up[15]. In our study there is preponderance of females over males most probably due to an increase in the rate of C-section and abdominal hysterectomies. Other factors could be their multiparity and increased propensity towards obesity and lax abdominal wall. In obese patients it is difficult to achieve reduction in weight but we put all patients on the drill to lose weight, which they continue happily after operation. The ideal weights are shown in Table 3. On the basis of our results we recommend the use of prosthetic mesh. It should be attached to the dorsal side of the defect with an overlap as large as possible. We recommend that the mesh be sutured with intervals of no more than 1-2cm in between the stitches. The mesh must not be sutured under tension and there should be no bulging. Contact between the mesh and viscera must be avoided because of the risk of adhesion and fistula formation.

Conclusion

In conclusion, the patients with incisional hernia, retrofascial preperitoneal repair with polypropylene mesh is superior to suture repair with regard to the recurrence of hernia even in patients with small defects.

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