

Role of Apronectomy Combined with Repair in Incisional Hernia

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This is a prospective study carried out at the East and North Surgical Units of Mayo Hospital, Lahore with a view to assess the outcome of repairing incisional hernia combined with apronectomy in obese patients. A total of 40 patients were obese with body mass index (BMI) more than 25. The medical examination of all these patients was done in detail. It was noted that the incidence of incisional hernia was closely related to the amount of abdominal fat. If proper technique of repair and apronectomy is adhered to and wound infection is prevented or controlled. The incidence of recurrence of incisional hernia can be greatly reduced and good cosmetic results can also be achieved.

Key words: Apronectomy, incisional hernia repair, complications

Hernia occupy a good deal of surgical time and account for about 10-15% of all surgical procedures¹. Out of this percentage the incidence of incisional hernia is 7%².

In contemporary society the slim female figure is in vogue. The subcutaneous adipose deposition sags down in the form of heavy "Apron" in obese people. The size and weight of this apron can be quite remarkable so that it may exert a considerable amount of downward traction on the abdominal aponeurosis in obese patients.

Apronectomy means resection of excessive fat and skin from anterior abdominal wall with preservation or sacrifice of umbilicus. Incisional hernia is one which occurs through an incisional wound that fails to heal soundly. It is the third most frequently encountered hernia following inguinal and para umbilical hernia³.

The history of incisional hernia is as old as the history of addominal surgery itself. The abdominal surgery in the nineteenth century has been followed by operations tomanage the incisional hernia.

Incisional hernia may be difficult to repair and recurrence rate also is often high. In certain studies it is noticed that obesity combined with other factors contribute more than 40% in aetiology of incisional hernia^{4,5,6}. The primary object of this study is to find out the recurrence rate and other post ooperative complication rate after incisional hernia repair combined with local excision ofr excessive abdominal skin and fat (apronectomy).

Patients and materials

Those patients who underwent the initial operations in the East or North Surgical Units or elsewhere were accepted for the study. Patients with known diabetes mellitus, hypertension and other serious illness were excluded from the study. In none of the patients apronectomy or abdominoplasty was done in previous operations. All the patients were admitted through out patient department of Mayo Hospital as elective cases.

Height, weight, body mass index (BMI), abdominal girth and weight of removed skin and fat was recorded in all patients. The BMI was used to define obesity status. It was derived from the formula:

$$\text{BMI} = \frac{\text{Body weight (Kgs)}}{\text{Height (m)}^3}$$

The acceptable (normal) range is 20-25. All included patients had BMI 25 or above. Depending upon the above mentioned crigteria 40 patients were found eligible for inclusion in the study.

The poor skin tone, excessive fat and weakness of musculoaponeurotic system was assessed in supine. Standing and bending forward positions preoperatively. The apron decided for excision was marked by using skin marker. Decision about umbilicus preservation was made preoperatively after discussion with patients. Surgical consultants carried out all hernia repairs combined with apronectomy. General anaesthesia was given in all cases. Hernia repair was accomplished by one of the following techniques.

1. Apronectomy, closure of rent and plication.
2. Apronectomy and keels repair
3. Apronectomy and Mayo's repair

Ethilon No.1 on round body needle was used for repair in 20 cases, prolene on round body needle was used for repair in remaining half.Two drains in criss-cross manner were used in each case which were kept till the drainage was reduced to less than 20cc/24hours.

According to the cosmetic result and the mental satisfaction at their last follow up visit, patients were divided into following groups.

Excellent: Cosmetic results were according to their expectations with no postoperative complications.

Good: Patients had few postoperative complaints or cosmetic results less than their expectation.

Satisfactory: Patients had better feelings than before but had some postoperative discomfort.

Poor: Patients felt worse.

Results

Forty cases were included in this study out of these 3 were male and 37 females (male to female ratio is 1:12.3). Age varied from 22 to 77 years, majority of the patients (60%) were between the age of 31 to 50 years. Presenting clinical

features are summarized in Table 1.

Table 1. Clinical presentation of incisional hernia in obese patients.

Clinical features	n=	%age
No pain	9	22
Pain		
a) Dragging pain	25	62
b) Off and on mild colic	6	15
c) Backache	6	15
d) Dull diffuse ache	7	17
Eczema of groins	10	25
Feeling of heaviness in the abdomen	6	15
Unightly deformity	5	12
Discharging sinus from the wound	2	15

Maximum number of incisional hernia 24(60%) patients were present below the umbilicus. Umbilicus itself was involved in only 4(10%) patients. Three patients (7.5%) presented with hernia above the umbilicus. Majority of patients (60%) were between the body weight of 60-80kgs. Body mass index varied between 27 and 46.

Table 2. Distribution of patients according to body mass index.

Body mass index (BMI)	No. of patients		Total	%age
	Male	Female		
>25 and <30 (mildly obese)		5	5	12.5
30 or >40 (obese)	1	28	29	72.5
40 or >40 (grossly obese)	2	4	6	15
Total	3	37	40	100

Twenty nine patients (72.9%) were obese, 6 patients (15%) were grossly obese and only 5 patients (12.5%) were labelled as mildly obese.

Apronectomy was done in all cases. In 32 patients (80%) simple closure of the rent and plication was carried out while in 6 patients (15%) repair was done by keels operation. In 2 patients (5%) Mayo's repair was done.

Table 3. The various types of repair combined with apronectomy carried out in cases of incisional hernia with obesity.

Type of repair	n=	%age
Apronectomy, simple closure of rent and plication	32	80
Apronectomy and keels operation	6	15
Apronectomy and Mayo's repair	2	5

In twenty patients (50%) Ethilon No.1 on round body needle was used and in other 20(50%) cases prolene on round body needle was used for repair. Both sutures showed same results.

Table 4. Efficacy of suture material used in repair of ventral hernia after doing apronectomy.

Suture material	n=	No. of failures	Failure %age
Polypropylene No.1 on round body needle	20	1	2.5
Ethilone No.1 on round body needle	20	1	2.5
Total	40	2	5

The weight of kins and fat excised varied between 3-19kgs.

Table 5. Weight of excised skin and fat during apronectomy

Weight (in kgs)	No. of patients
1-2	-
3-4	4
5-6	8
7-8	5
9-10	8
11-12	4
13-14	4
15-16	4
17-18	2
19-20	1
Total	40

Five percent of the patients developed postoperative complications that were treated by giving intravenous antibiotic, early removal of stitches from infected part of wound and repeated dressings. Five percent of patients developed seroma out of these only one patient (2.5%) needed aspiration. One patient developed hematoma which needed proper drainage. One patient showed necrosis of small part of lower edge of upper flap. It required a little debridement followed by secondary suturing. There was recurrence of incisional hernia in 2 patients (5%). Both patients were grossly obese. They got wound infection. For these patients further surgery was planned.

Table 6. Complications after doing apronectomy combined with repair in incisional hernia

Complications	No. of patients		Total	%age
	Male	Female		
Wound infection	1	2	3	7.5
Seroma (needed aspiration)	-	1	1	2.5
Seroma (aspiration not required)	-	2	2	5
Small area of sloughing	1	1	2	5
Recurrence	1	1	2	5
Hematoma	-	1	1	2.5
Total	3	8	11	

Majority of the patients 88% stayed in the hospital for 4-8 days. At the time of discharge from the hospital, the abdominal girth of every patient was measured. Majority of the patients (68%) reduced their abdominal girth 16 to 35cms.

Discussion

If we consider complications other than recurrence, we can compare present study with a study of 539 consecutive abdominoplasties performed by IVO Pitanguy between 1953 and 1974^{7,8}. In Pitanguy series overall complications were repaired only with dermolipectomies. In present study in all cases big hernias were dealt, combined with dermolipectomies. He operated only 35% cases for post surgical scar but in recent study all obese cases were operated for incisional hernia. He has mentioned only early

complications after six months follow up but not late complications like recurrence of hernia. In present study 5% recurrence rate is mentioned after one year follow up.

In most of the series, recurrence rate of the incisional hernia is between 20-30%. In Ponka's 1980 series of 794 incisional hernia 40% patients were discovered to be obese^{13,14}. Out of this 40%, 13% patients showed recurrence of incisional hernia. In the present study 2 out of 40 patients revealed recurrence, that is 5% over the follow up period of one year. This recurrence is far less as compared to Ponka's series.

The factors causing recurrence of incisional hernia in 2 out of 40 patients included infection, gross obesity and prolonged idiopathic ileus (i.e. more than 2 days). Their hernia rents were very large with weak musculoaponeurotic apparatus of abdominal wall. One of these patients had chronic rectovesical fistula. After initial treatment further surgery was planned in both cases.

Patients got rid of hernia, apron of fat and ugly scar in the single operation. It showed very good cosmetic affects and improvement in patients marital relations. According to the satisfaction grading at the last follow up visit, 30% were termed as excellent results, 47.5% as good results and 15% as satisfactory results, only 7.5% were unhappy with outcome.

Abdominal girth reduction varied from 14 to 55cms. None of our patient gained weight because of motivation and they found themselves fit to resume their routine activities.

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