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Comparative Evaluation of Sublay versus Onlay Meshplasty in Massive Incisional Hernia

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Abstract
OBJECTIVE: To compare sublay versus onlay meshplasty in massive incisional hernia in terms of recurrence and complication.
DESIGN: Prospective comparative study.
SETTING AND DURATION OF STUDY: Study was carried out in surgery department at ANMMC GAYA& SKMC Muzaffarpur during 2019 to 2021.
METHODOLOGY: This study includes 57 elective cases of massive incisional hernia with defect size greater than 10 cm were randomly placed in sublay(preperitoneal)29 cases in group A and onlay(mesh placed to anterior rectus sheath)28 cases in group B.Mean age of cases were 37 years.Many patients with obstructive or strangulated massive incisional hernia were excluded from this study.Outcomes of two technique in terms of recurrence and postoperative early and late complication were observed with follow up of 12-14 month.
RESULTS: There was higher rate of recurrence in onlay(mesh placed to anterior rectus sheath) technique in comparision to sublay (preperitoneal) technique. Rate of Seroma formation, superficial wound infection, flap necrosis and sinus formation was more in onlay (mesh placed to anterior rectus sheath).No mortality seen in either group.
CONCLUSION: Sublay(preperitoneal) meshplasty in massive incisional hernia is more effective with less recurrence and relatively few early and late complications than onlay(mesh placed to anterior rectus sheath)meshplasty.
Key Words: *Sublay onlay,meshplasty and prospective.*

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I. Introduction:

Incisional hernia is herniation through a weak abdominal scar.It is common in obese individual and old age.Predisposing factor for incisional hernia is-vertical scar,midline scar,lower abdominal scar(may injure nerve of abdominal muscle).Other predisposing factors include scar of major surgery,scar of emergency surgery,faulty technique of closure,poor nutritional status of patient. Presence of cough, Tuberculosis,jaundice,anemia,hypoproteinemia,malignancy,immunosupression and smoking in postoperative period also predispose patient to massive incisional hernia. All causes which increases the intraabdominal pressure (BPH, Straining, Urethral/rectal stricture, Ascites) increases risk of massive incisional hernia. It has been seen that vertical incision has higher chance of incisional hernia than horizontal incision. Layered closure of the abdomen has higher chance of incisional hernia than single layer closure. Continuous suturing of incision has higher chances of incisional hernia than interrupted suturing of incision.

Use of permanent prosthetic prolene mesh for the repair of incisional hernia has shown to reduce the overall risk of recurrent hernia in range of 10-25% compared with primary suture repair having risk of recurrent hernia in range of 30-35% on long term follow up.

The technique of placement of mesh include-onlay,inlay sublay and underlay but best position for inserting the mesh has not been conclusively established till date as per literature.Although,Polyprolene mesh has long been regarded as the implant of choice for repairing abdominal wall defects,there is still controversary regarding the best site of its placement.

Our team did a prospective study to compare sublay(preperitoneal) versus onlay(mesh placed to anterior rectus sheath)meshplasty in influencing the final outcome in massive incisional hernia in terms of recurrence and early and late postoperative complication.

II. Material And Method:

This prospective study include 57 cases of massive incisional hernia electively operated in department of surgery at ANMMC GAYA and SKMC Muzaffarpur during 2019-2021. All 57 cases selected for study had defect size greater than 10 cm. All selected cases were randomly placed in sublay (preperitoneal) 29 cases in group A and Onlay(mesh placed to anterior rectus sheath)28 cases in group B.Mean age of cases were 37 years.Many patients with obstructive or strangulated massive incisional hernia were excluded from this study.

INCLUSION CRITERIA: 57 male and female having massive incisional hernia with defect size greater than10 cm without any sign of obstruction and strangulation were included in the study.

EXCLUSION CRITERIA: All those male and female having massive incisional hernia with defect size less than 10 cm and with any feature of obstruction or strangulation were excluded from this study.

A detailed history and thorough physical examination done. After confirmation of diagnosis an attempt was made to look for possible precipitating factors. For this all cases included in study were investigated by x-ray chest, ultrasonography whole abdomen along with baseline investigation like CBC,LFT ,RFT,RB-S and viral markers. All operation carried out under general anesthesia with relaxation with proper antibiotic coverage. All operative findings and post-operative complications were recorded.

III. Obsevation:

Out of 57 cases 40(70%)were female and 17 cases(30%) were male. Age ranged from 25 to 65 years with mean age 37 years. The female to male ratio was 2.3:1.The mean total time of surgery in sublay group was60 to 100 minutes compared to 40 to 90 minutes in onlay group. Suction drain was kept in all cases of sublay and onlay meshplasty. Drains in sublay group were removed after 72 hours average except 4 cases in which drain was removed on 5th day.In onlay group drain was removed after 96 hours average except in 6 patients in whom seroma was present and drain was kept for 7 days. Postoperative complications like erythema, cellulitis hematoma, seroma and wound infection as well as bowel related problems were compared in both groups as shown in Table.

TABLE: Observation in the present study.

PARAMETERS	SUBLAY MESHPLASTY (Group A)n=29	ONLAY MESHPLASTY (Group B)n=28
Superficial wound infection/erythema	3%	7%
Seroma/hematoma formation	3%	7%
Flap necrosis	1%	4%
Enterocutaneous fistula	0%	0%
Erosion of mesh into intestine/Adhesion/Small bowel obstruction	3%	0%
Mesh removal	3%	7%
Neuralgia	0%	4%
Recurrence	0%	7%

Mean duration of hospital stay in sublay group was 6-7 days whereas it was 8-9 days in Onlay group. Time off work in patients of sublay group was 8 weeks as compared to 10 weeks in inlay group.There was no bowel related complication in Onlay group while in sublay group 1 patient presented with intestinal obstruction due to adhesions of small bowel with prolene mesh.Laparotomy was done to remove the mesh and relieve the obstruction.There was no recurrence in sublay group whereas in inlay group 2 cases of recurrence was seen after a follow up of 12 to 14 months.Out of 57 patients 48 patients came for follow up,remining 9 cases did not report for follow up.

IV. Discussion:

It is estimated that 2 to 10% of all abdominal operations result in an incisional hernia.Small incisional hernia are often successfully closed with primary tissue repair.However,massive incisional hernia have a recurrence rate of 30 to 40 % where a tissue repair alone is performed.

Hernia recurrence is distressing to patient and embarrassing to surgeons.Nowadays tension free repair using polypropylene mesh is an ideal hernia repair technique which has decreased the incidence of recurrence to negligible o-10%.In our study out of 57 patients 29 patients operated by sublay technique mesh repair with minimal complications.It was associated with seroma formation in the immediate postoperative period.In our study the incidence of seroma was 3% compared with 2.7% in local series and 5% and &7.6% in another study.

Septic complication of prosthetic mesh have been reported to occur in less than 1 %. The superficial wound infection rate in this series was 3% in sublay group and 7% in Onlay group which is comparable with

international figure of 3-8%.In our study no deep infection has been observed around the mesh.There was a single case of bowel complication, that is bowel obstruction, due to adhesion to mesh and no recurrence was seen as shown in literature the incidence between 0.05-0.2%.

Another 28 patients of massive incisional hernia operated by onlay meshplasty.In this series incidence of seroma is 7%,superficial wound infection 7%, flap necrosis in 4%,neuralgia in 4% and recurrence was seen in 7% cases.Hernia recurrence rate in our study in onlay series is 7% as compared with other study 4-11% has been observed.Poor surgical technique and post operative wound infection are two most important factors in the development of massive incisional hernia and its recurrence.

V. Conclusion:

Preperitoneal sublay meshplasty is safe and effective technique for massive incisional hernia with few early and late complications and without recurrence in comparision to onlay meshplasty. Nowadays preperitoneal sublay meshplasty is a gold standard technique for repair of massive incisional hernia.

References:

[1]. KingsnothA, leBlanc K. Hernia:Inguinal & Incisional.Lancet 2003,362:1561-71.
[2]. Langer C, Neufang T, Kley C, Liersch T, Becker H.Centralmesh recurrence after incisional hernia repair with Marlex, are the meshes strong enough? Hernia 2001;5:164-7
[3]. Casar K, Munro A; Surgical treatment of incisional hernia. Br. J Surg 2002; 89:533-45
[4]. Kollar R, iholic J, Jakl J. Repair of incisional Hernia with reexpanded polyterafluoroethylene. Eur J Surg 1997; 163; 156-60
[5]. Cassar K, Munro A; Surgical treatment of incisional hernia, Br. J Sur 2002;89:534-545
[6]. Petersen S, Henke G, FaulhaberA, deep prosthesis infection in incisinal hernia repair:predictive factors and clinical outcome.

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