

A CASE SERIES OF VENTRAL HERNIA REPAIR WITH OCTOMESH

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Abstract

Background: The word “hernia” is derived from a Latin term meaning “a rupture. A hernia is defined as an area of weakness or complete disruption of the fibromuscular tissues of the body wall. Structures arising from the cavity contained by the body wall can pass through, or herniate, through such a defect. Hernias of the anterior abdominal wall, or ventral hernias, represent defects in the parietal abdominal wall fascia and muscle through which intra-abdominal or preperitoneal contents can protrude. Ventral hernias can be repaired by tissue repair techniques or by meshplasty. Often, high recurrence rate is observed in ventral hernia repairs. Issues in ventral hernia repair are represented by the need for mesh fixation and how to assure a sufficient mesh overlap of the defect. Aiming to resolve these problems, this study is about a modified technique for ventral and incisional hernia repair based upon a newly developed mesh that is Octo mesh This new type of implant allows broader coverage of the abdominal wall and results in tension- and fixation-free repair. **Aim:** This study aims to study ventral hernia repair with sutureless fixation and broader overlap of the hernia defect by incorporating a newly designed Multitail polypropylene mesh- that is Octomesh. **Materials and Methods:** Mesh Hernioplasty is the current standard of treatment in cases of Ventral hernia which was used as a procedure in this study in from a period of 5 years from 2019 to 2023 This retrospective clinical study consists of 30 patients with ventral hernia managed by SublayOctomesh mesh repair in JNUIMSC, Jaipur, Rajasthan, India. The patients who were admitted to surgical wards, diagnosed to have Ventral hernia and managed by Sublay Mesh repair were included in this study. The Octomesh implant, developed by Prof. Amato and a team of physiologists and engineers, eliminates the need for fixation with sutures. While it looks similar to standard implant bodies, Octomesh has eight integrated radiating arms, which can be quickly and simply tunneled through the muscles of the abdominal wall using a simple “out-in” strap passer approach to give secure frictional placement. Octomesh's large central body covers well beyond the borders of the defect and is held securely in place by friction alone, making point fixation obsolete. Once deployed, the Octomesh's tentacles hold the implant in place during the critical early postoperative period. All patients underwent thorough clinical examination and a detailed history. and were evaluated for systemic disease or precipitating cause. Patients who had hypertension, diabetes mellitus or cough were controlled preoperatively. Routine investigations were done for all patients including chest x-ray and ultrasonography of the abdomen. A day prior to surgery, shaving of the abdomen and genitalia was done. Broad-spectrum antibiotics was given to all patients before the procedure. Patient was explained about the effects and complications of the procedure. The procedure was done under general anaesthesia, spinal or epidural anaesthesia in supine position.

INTRODUCTION

The word “hernia” is derived from a Latin term meaning “a rupture.”^[1]A hernia is defined as an area

of weakness or complete disruption of the fibromuscular tissues of the body wall. Structures arising from the cavity contained by the body wall can pass through, or herniate, through such a defect.

Hernias of the anterior abdominal wall, or ventral hernias, represent defects in the parietal abdominal wall fascia and muscle through which intra-abdominal or preperitoneal contents can protrude.^[3]Ventral hernias can be repaired by tissue repair techniques or by meshplasty.^[4]Often, high recurrence rate is observed in ventral hernia repairs.^[5]Issues in ventral hernia repair are represented by the need for mesh fixation and how to assure a sufficient mesh overlap of the defect. Aiming to resolve these problems, this study compares a modified technique for ventral and incisional hernia repair based upon a newly developed mesh with a special design and conventional repair in preperitoneal mesh plasty in cases of ventral hernia. This new type of implant allows broader coverage of the abdominal wall and results in tension- and fixation-free repair.

MATERIALS AND METHODS

The study was conducted at the department of General Surgery. A total of 30 patients, with diagnosis of ventral hernia that underwent preperitoneal mesh plasty were included in the study.

Inclusion Criteria: All patients with Uncomplicated Ventral hernia with age between 18 and 70 years who were fit for surgery were included in the study.

Exclusion Criteria: Complicated hernias (such as strangulated and obstructed) and patients with ASA risk 4 or more were not included in the study.

The preperitoneal (sublay) mesh hernia repair was first described by Rene Stopa, Jean Rives, and George Wantz. This technique is considered by many surgeons to be the gold standard for the open repair of abdominal incisional hernia.^[6]A large piece of mesh is placed in the preperitoneal space. With smaller defects, the mesh does not need to be sutured because it is held in place by intraabdominal pressure (Pascal's principle), allowing eventual incorporation into the surrounding tissues. Alternatively, in larger defects, the mesh can be secured laterally with several sutures. This approach avoids contact between the mesh and abdominal viscera.

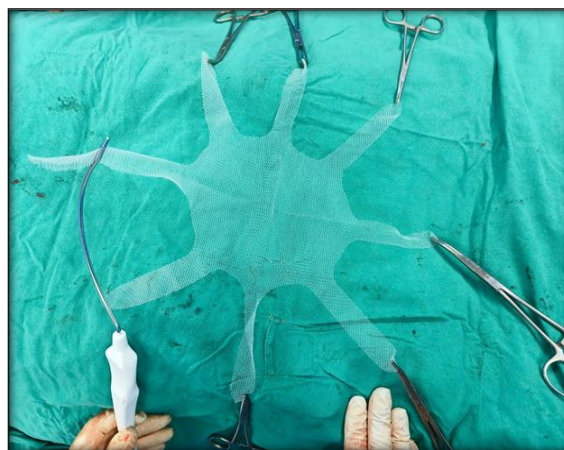


Figure 1:



Figure 2:

RESULTS

A. Patient Demographics: 14 patients were male and 16 patients were female with mean age being 49.57 years. [Table 1]

Abdominal swelling was the chief complaint in all the patients and pain in abdomen in 15 of them. 18 patients of incisional hernia, 6 patients of epigastric hernia and 6 patients of paraumbilical hernia were included in the study. [Table 2]

Post-operative Course ? Follow up was short ? But during this period cosmetic results excellent ? Post-operative pain nil to minimal / No seromaformation ? No recurrences.

Table 1: Sex Distribution

SEX	NO OF PATIENTS	PERCENTAGE
MALE	14	46.67
FEMALE	16	53.33
TOTAL	30	100

Table 2: Type of Ventral Hernias

TYPE OF VENTRAL HERNIA	NO OF PATIENTS	PERCENTAGE
EPIGASTRIC HERNIA	6	20
UMBILICAL HERNIA 6	6	20
INCISIONAL HERNIA	18	60

DISCUSSION

In present study, age ranged from 26 years to 70 years and with peak incidence in 31 to 50 age group. As per the Maingot's studies, mean age was around 45 years.^[10] There is a female preponderance noticed with 81.1%. In Bhutia et al study, the female : male ratio was 3:1.5 with female preponderance 84%,^[11] in this study all patients are presented with history of swelling, associated pain was present in 36 cases. Most of cases in our series, it was reducible hernia (92.5%) and with 7.5% of cases had irreducible hernia. We had approximately 33.9% of cases with early onset of incisional hernia (within one year of previous surgery) whereas 66.1% of cases had onset of incisional hernia in second year. Majority of incisional hernias (80%) developed in the first two years as per international studies.^[12] In this study, 77.3% of cases developed incisional hernia through lower midline incision, 9.4% through Pfannenstiel incision, 7.6% through upper midline incision, 5.7% through paramedian incision. Seroma formation is comparable with Manohar et al study but significantly more compared to Leber et al study¹⁰. In our study, the most of the hospital stay spent in preoperative workup and in the treatment of associated medical illness, if any, to reach the normal parameters for safe surgery. Total duration of hospital stay is increased when risk factors are present and duration of hospital stay after surgery also increased when the risk factors are present. In present study, we had followed up all the patients after discharge for 15 days, 1 month, 3 months and few cases upto 6 months of duration. There was no recurrence of incisional hernia noticed in the present study. de Vries Relingh TS et al reported a recurrence rate of incisional hernia following different techniques of mesh repair as follows: In onlay technique it was 28.3%, inlay technique 44%, and underlay technique 12%¹⁹. Leber et al reported a recurrence rate of 17%, Antonie Hamy et al 3.1% of cases.^[12] There was no recurrence in Hameed et al and Manohar et al study. The main advantage of pre peritoneal mesh repair are - Less chance of mesh infection and erosion through skin because the graft lies in preperitoneal plane between posterior rectus sheath and peritoneum, avoids adhesions, bowel obstruction, enterocutaneous fistula and erosion of mesh, minimal morbidity and duration of hospital stay is less compared to other techniques. The main disadvantage is more time consuming, extensive preparation of preperitoneal plane and surgical experience. The preperitoneal (sublay) mesh hernia repair was first described by Renestopa, Jean Rives, and George Wantz. This technique is considered by

many surgeons to be the gold standard for the open repair of abdominal incisional hernia.

Major problems that occur during octomesh incisional hernia is ?Recurrence ? Chronic post operative pain ?Seroma formation ?Infection ?Badly scarred abdomen.

CONCLUSION

Technical advantages of using octomesh is that it requires (1) Minimal sub cutaneous dissection (2) Large mesh can be used easily (3) Easy to learn (4) No fixation sutures (5) Can be spread easily and uniformly. Therefore, less number of postoperative complications noticed in present study. No recurrence noticed in this study. In the present study, preperitoneal octomesh repair had excellent long-term results with minimal morbidity.

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