

Original Research Article

Laparoscopic Ventral Hernia Repair - Minimal Invasive Procedure with Maximum Advantage, Our Experience

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Abstract: Laparoscopic ventral hernia repair nowadays is a method of choice because of benefits like - short hospital stay, fixation of large sized mesh apart from the cosmetic benefits. But the mesh and the fixation device are expensive, procedure is challenging in case of previously operated abdomen and malignancies. To discuss our experience and outcome with laparoscopic ventral hernia repair with intraperitoneal on lay mesh (IPOM). 25 Patients who underwent ventral and incisional hernias repair by laparoscopic intra peritoneal on lay mesh repair (IPOM) in a single hospital, from June 2015 to June 2016 by the same single operating team were taken in the study, to standardize the procedure and to evaluate it. Out of 25 patients who underwent laparoscopic intra peritoneal on lay mesh repair (IPOM) there were 15 females and 10 males, with the average age being 50 years (30-70). 12 cases of Para umbilical hernia, 10 - incisional hernia and 3 cases of umbilical hernia were taken. The size of defect ranged between 5-10cm, dual mesh EPTEFE was used in all patients. The operating time in the study was 1-2hrs. No case was converted to open and the patient stayed in hospital for 4 days post operatively. 2 patients had ileus, 10 months follow up was done for all 25 patients. Laparoscopic intra peritoneal on lay mesh repair for ventral hernia (IPOM) is safe and has benefits of rapid recovery and better outcome.

Keywords: Laparoscopic ventral hernia repair, IPOM (intraperitoneal on lay mesh repair).

INTRODUCTION

Ventral hernias are common problem in surgical practice. Ventral hernia refers to hernias of the anterior abdominal wall which may be umbilical, Para umbilical, epigastric or incisional hernias (following surgeries) [1]. The incidence of these hernias is increasing, occurring in younger patients and they constitute a large burden on the healthcare system [2]. These are currently treated by the open or laparoscopic approach. Laparoscopic intra peritoneal on lay mesh repair (IPOM) was first reported in 1993 by Karl LeBlanc; since then the repair has been popularized as the preferred procedure of choice for ventral hernia repair. It has benefits like lesser pain, shorter hospital stay; larger mesh can be fixed with better cosmesis [3]. Hernia repair with mesh had recurrence rate of 20 %, which reduced in IPOM. However, the procedure is

expensive, and is challenging in case of previously operated abdomen and malignancies.

MATERIALS AND METHODS

A total of 25 patients with ventral hernia who underwent laparoscopic intra peritoneal on lay mesh repair between June 2005 to June 2016 in the Department of the General Surgery, Vinayaka Missions Medical College and hospital, Karaikal by a single surgical team were included into the study.

Inclusion Criteria

All patients with ventral hernia who were fit for general anesthesia.

Exclusion Criteria

Patient unfit for general anesthesia / pregnancy
 All patients underwent preoperative evaluation, including thorough physical examination and defect size was noted. All routine parameters were evaluated.

Surgical Techniques

The patient was placed in supine position, general anesthesia induced, and intravenous antibiotic cover given. Pneumoperitoneum was created with Verses needle, introduced away from hernia in palmer’s point (Umbilicus or 2 cm below left costal margin in the midclavicular line). Two ports were introduced successively below the palmer’s point, in previously non operated area. Usually we use 3 ports, 5 mm visual port for 30 degrees telescope. It was usually the port converted to 10 mm for the placement of large size of mesh. Another two 5 mm port for working were utilized depending on site and size of ventral hernia. Preoperatively, the margins of hernia defect were marked. Gentle reduction of content and adhesiolysis done with electro cautery and a combination of blunt and sharp dissection. The margins and periphery of hernia defect was evaluated by direct visualization and palpation after complete reduction of contents. Suitable sized mesh was prepared by placing preplaced non

absorbable sutures for transfascial fixation. We routinely used 1 central and 4 peripheral sutures of prolene or nylon. The largest mesh was 20x15cm mesh and minimum size used in our study was 15 x 15cm. In all patients we used Parietex dual mesh (polyester with collagen polyethylene glycol–glycerol coating, manufactured by Covidien). Prepared mesh was rolled and introduced into the abdomen through the 10 mm port. The time was recorded starting from placing the mesh in the abdomen to its final fixation. The mesh unrolled inside the abdomen taking care of the orientation before fixation. Oxidized cellulose side was kept on visceral surface. The PR placed sutures at the periphery and center were pulled out using transfascial fixation needle (Aesculap, Germany) through very small skin incisions. We usually pick the central fixation first as it helps in orientation of a larger sized mesh. These sutures are ligated subcutaneously and required no skin sutures. Mesh is then duly fixed with 5 mm absorbable tackers (covidien) in 2 layers. Then skin closed. Patients were observed post operatively for 4 days, followed up 1 week, 1 month, 3 months and 10 months post operatively .Any complications were noted and managed accordingly [4].

RESULTS

Table-1: Characteristic of patients

A. Sex Distribution	Males	Females
	10	15
B.Age Distribution	Min age	Max age
	30	70
C.Type of Hernia	Type	Number
	Infraumbilical Hernia	12
	Incisional Hernia	10
	Umbilical Hernia	3

Table-2: Complications among patients

Complication	Number Of Patients	Percentage (%)
A)Intra Operative Adhesion	10	40
B)Seroma	2	8
C)Ileus	2	8
D)Wound Infection/Haematoma	1	3

In our study laparoscopic intra peritoneal on lay mesh repair was performed in 25 patients, including 15 females and 10 males, in the age group of 30-70 with the mean age being 50 years. The study included 12

Para umbilical hernias, 10 incisional hernias and 3 umbilical hernias. Single defect was noted intraoperative in 22 patients and multiple defects noted in 3 cases. The maximum diameter of the defect noted

was 5 – 10 cm, for which we used 20×15 cm mesh, while 15×15 cm mesh was used for small defects. No conversion to open method noted. Operative duration varied from 1-2 hrs. Intraoperative adhesions were noted in 10(40%) patients. Post-operative complications included- seroma in 2 patients (8%), ileus in 2 cases (8%). Wound infection or hematoma was noted in one patient (4%). Transient postoperative pain of 3 – 4 days was noted in 3 patients. No recurrences were noted in the study. There are a few limitations in the study. The number of cases is smaller and it is a retrospective study. All the cases that was willing to afford expenditure that were fit for general anesthesia was included in study.

DISCUSSION

Incision Hernia develops in 3% to 13% of laparotomy operations. Repair of hernia by a prosthetic mesh is a well-recognized, low recurrence procedure. But whether to be done by open or laparoscopic technique is still a topic of debate. Ventral and incisional hernias are common long term postoperative complications following abdominal surgery and have an incidence of 3-20 % [5]. It is more common in females. Laparoscopic ventral hernia repair allows clear identification of multiple hernia defect which could be missed during open hernia repair. Multiple defects were noted in 3 (12%) cases in our study. Minimum mesh overlap should be 4-5 cm from the edge of defect, although; it is suggested that if transracial sutures were used it could be at least 3 cm [6]. This encourages tension free repair and proper overlap of the defect. We used minimum mesh overlap of 4-5 cm on all sides. This was fixed with Tran's fascia. Patients who underwent IPOM reported early recovery, decreased hospital stay, minimal morbidity and very low recurrence and the procedure is gaining acceptance and popularity in the treatment of ventral hernias. Several trials have proved this statement [7].

CONCLUSION

Laparoscopic intraperitoneal on lay mesh (IPOM) in our experience was observed to be an effective surgical procedure for ventral hernia repair. It is safe and has benefits of rapid recovery and better outcome and less hospital stay and rare chance of recurrence in experienced hands. Hence it can be considered as primary procedure for ventral hernia repair [8,9].

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