

# Assessment Of Results Of Laparoscopic Ventral Hernia Repair Using Mesh Insertion

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## Abstract

**Background:** Ventral hernia is an anterior abdominal wall hernia. The present study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion.

**Materials & Methods:** 58 patients of ventral hernia of both genders were operated under general anesthesia (GA). LVHR technique was used as Closure technique. Parameters such as type of hernia, mean operative time (mins), post-operative pain on day 3, week 1, 3 and months 3 were recorded.

**Results:** Out of 58 patients, males were 38 and females were 20. Type of hernia was incisional in 34 and umbilical in 24. The mean operative time was 70.4 minutes. Complications recorded were grade I in 8 and grade II in 3 patients. The difference was significant ( $P < 0.05$ ). Pain on day 1, week 1, week 3 and month 3 at trocar site was seen in 58 and 7, at suture site in 58, 12 and 6, at HD site was seen in 58 and 4 respectively.

**Conclusion:** Laparoscopic ventral hernia repair using mesh is an effective and safe procedure. There was less post-operative pain observed in patients.

**Key words:** mesh, Ventral hernia, pain

## INTRODUCTION

Ventral hernia is an anterior abdominal wall hernia (excluding groin hernia).<sup>1</sup> Ventral hernias, whether naturally occurring or the result of previous surgery, comprise one of the most common problems confronting general surgeons, with overall incidence between 2% and 13%. Factors associated with formation of ventral hernia include wound infection, immunosuppression, morbid obesity, previous operations, prostatism, and surgery for aneurysmal disease.<sup>2</sup> Abdominal wall defects are typically observed within the first 5 years after the surgical incision is made, but they may develop long afterward. These hernias contribute importantly to the long-term morbidity of conventional surgery. Until techniques for the prevention of hernias are established, repair of these defects will remain an important problem for all abdominal surgeons.<sup>3</sup> It was initially performed by the open technique to restore the anatomical layers without mesh insertion, and the recurrence rate could range from 31% to 54%. Laparoscopic ventral hernia repair was described first by LeBlanc et al, in 1993 for all types of hernia. This surgical technique has improved over the last decade and has been proven to be an effective treatment option.<sup>4</sup>

The laparo endoscopic groin hernia repair using synthetic mesh in TEP or TAPP are acceptable surgical techniques today. These techniques are rarely associated with mesh induced complications, the reason being extraperitoneal placement of synthetic mesh.<sup>5</sup> It is apparent that despite great progress in mesh technology, nearly all types of meshes have been found to produce a varying level of adhesion or tissue reaction, regardless of the material and coating used.<sup>6</sup> The present study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion.

## MATERIALS & METHODS

The present study comprised of 58 patients of ventral hernia of both genders. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. After thorough examination, all patients were subjected to abdominal ultrasound, hematology, biochemistry, and pre-anesthesia check-up (PAC). All patients were operated under general anesthesia (GA). LVHR technique was used as Closure technique. Parameters such as type of hernia, mean operative time (mins), post-operative pain on day 3, week 1, 3 and months 3 were recorded. Data thus obtained were subjected to statistical analysis.  $P$  value  $< 0.05$  was considered significant.

## RESULTS

**Table I** Distribution Of Patients

Total- 58		
Gender	Males	Females
Number	38	20

Table I shows that out of 58 patients, males were 38 and females were 20.

**Table II** Assessment Of Parameters

Parameters	Variables	Number	P value
Type of hernia	Incisional	34	0.05
	Umbilical	24	
mean operative time (mins)		70.4	-
Complications	Grade I	8	0.01
	Grade II	3	
	Grade III/IV	0	

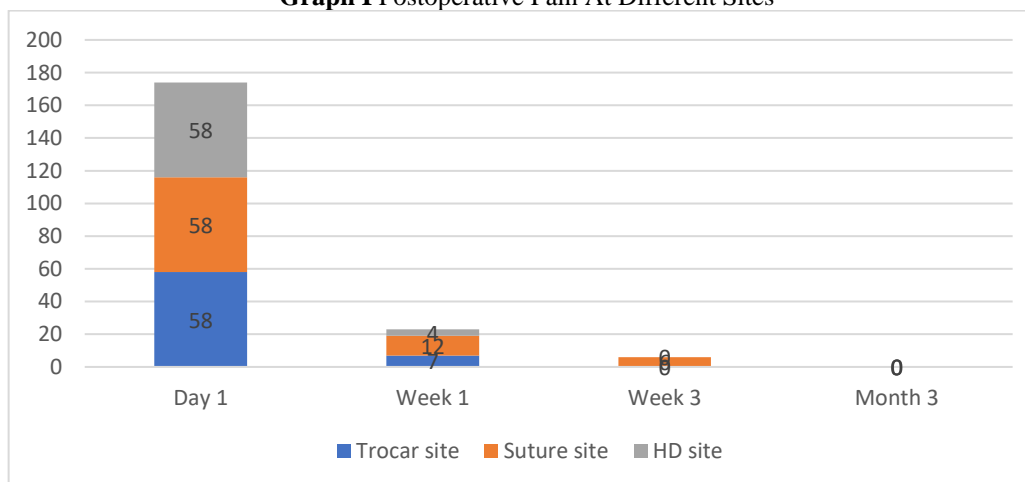
Table II shows that type of hernia was incisional in 34 and umbilical in 24. The mean operative time was 70.4 minutes. Complications recorded were grade I in 8 and grade II in 3 patients. The difference was significant ( $P < 0.05$ ).

**Table III** Postoperative Pain At Different Sites

Site	Day 1	Week 1	Week 3	Month 3	P value
Trocar site	58	7	0	0	0.01
Suture site	58	12	6	0	0.04
HD site	58	4	0	0	0.03
Seroma	0	0	0	0	0

Table III, graph I shows that pain on day 1, week 1, week 3 and month 3 at trocar site was seen in 58 and 7, at suture site in 58, 12 and 6, at HD site was seen in 58 and 4 respectively.

**Graph I** Postoperative Pain At Different Sites



## DISCUSSION

Many hernia repair methods have been described. Traditional primary repair entails a laparotomy with suture approximation of strong fascial tissue on each side of the defect.<sup>7</sup> However, recurrence rates after this procedure range from 41% to 52% during long-term follow-up.<sup>8,9</sup> Herniorrhaphies in which large prosthetic meshes are implanted appear to have lower failure rates (12–24%), but the required dissection of wide areas of soft tissue contributes to an increased incidence of wound infections and wound-related complications (12% or higher). These problems have stimulated a continuing search for new techniques for repairing ventral hernias.<sup>10,11</sup> The present study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion.

We found that out of 58 patients, males were 38 and females were 20. Heniford et al<sup>12</sup> evaluated the efficacy and safety of laparoscopic repair of ventral hernias. Data on all patients who underwent laparoscopic ventral hernia repair (LVHR) performed by 4 surgeons using a standardized procedure were collected prospectively (85% of patients) or retrospectively. LVHR was completed in 819 of the 850 patients (422 men; 428 women) in whom it was attempted. Thirty-four percent of completed LVHRs were for recurrent hernias. The patient mean body mass index was 32; the mean defect size was 118

cm<sup>2</sup>. Mesh, averaging 344 cm<sup>2</sup> was used in all cases. Mean operating time was 120 min, mean estimated blood loss was 49 mL, and hospital stay averaged 2.3 days. There were 128 complications in 112 patients (13.2%). One patient died of a myocardial infarction. The most common complications were ileus (3%) and prolonged seroma (2.6%). During a mean follow-up time of 20.2 months (range, 1–94 months), the hernia recurrence rate was 4.7%. Recurrence was associated with large defects, obesity, previous open repairs, and perioperative complications.

We observed that type of hernia was incisional in 34 and umbilical in 24. The mean operative time was 70.4 minutes. Complications recorded were grade I in 8 and grade II in 3 patients. Deo et al<sup>13</sup> assessed results of laparoscopic ventral hernia repair using mesh insertion. In the present study 40 patients were operated by this technique. Mean operating time for was 72 mins. Lower abdomen hernia was the most common. Mean length of closed HD was 9.2cm. in maximum patients grade I complications was present. Pain was present in 40 patients on trocar site after postoperative 3rd day and in 5 patients after 1st week. Pain was present in 40 patients at suture site after postoperative 3rd day, in 9 patients after 1st week, in 8 patients after 3 week and in 1 patient after 3 months. Pain was present in 40 patients at suture site after postoperative 3rd day, in 3 patients after 1st week, in 1 patient after 3 week and in 0 patient after 3 months. Seroma was not occurred We found that pain on day 1, week 1, week 3 and month 3 at trocar site was seen in 58 and 7, at suture site in 58, 12 and 6, at HD site was seen in 58 and 4 respectively. Ramesh et al<sup>14</sup> retrospectively studied 821 patients and long-term outcomes such as pain, mesh infections, enterocutaneous fistula, bowel adhesions and recurrence were assessed. There were 801 primary, 12 incisional, and 8 recurrent hernia cases, including 532 females and 289 males with a mean age of 45.62±9.37 years. IPOM PLUS were underwent in 674 (82.10%) cases. Polypropylene, dual, titanium, composite meshes were applied in 473 (57.61%), 208 (25.33%), 82 (9.99%), and 58 (7.06%) cases respectively. Intraoperative bleeding occurred in 3 (0.37%) cases, seroma in 8 (0.97%), wound infection in 4 (0.49%), stitch abscess in 2 (0.24%). Recurrence was found in 8 (0.97%) cases, with 5 used polypropylene mesh and 3 used dual mesh. Mesh infections were discovered in 6 (2.88%) cases used dual, and foreign body sensation in 4 (0.85%) cases used polypropylene. Three (0.37%) patients had suture site hernia, and 3 (0.37%) had chronic sinus. The limitation the study is small sample size.

## CONCLUSION

Authors found that laparoscopic ventral hernia repair using mesh is an effective and safe procedure. There was less post-operative pain observed in patients.

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