ORIGINAL RESEARCH

Analysis the results of laparoscopic ventral hernia repair using mesh hernioplasty - A pilot study

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ABSTRACT
Laparoscopic ventral hernia repair (LVHR) is superior than the open repair in terms of less post opertaive pain , less blood loss, lowwound complications and shorter hospital stay. This study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion. **Material and methods:** The study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion in which LVHR technique was used as closure the defect. The patients were followed up at 1 week, 3 weeks, 3 months. **Results:** 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 hernia defect was 9.2cm. In maximum patients main complaint was bulge and pain.Post operativepain 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. Seroma was not occurred. **Conclusion:** The present study concluded that laparoscopic ventral hernia repair using mesh is an effective and safe procedure with very low postoperative pain.

Keywords: Ventral hernia repair, Laparoscopic repair, open repair

INTRODUCTION

A ventral hernia is a bulge of tissues through an opening of weakness within abdominal wall muscles. It can occur at any location on abdominal wall and it may be post operative incisional hernias (1, 2). 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 aventral hernia include wound infection, immunosuppression, morbid obesity, previous operations, prostatism, and surgery for any abdominal pathology. Ventral hernia repair has seen a progressive development. It was initially performed by the open technique to restore the anatomical layers without mesh insertion. Recurrence rate after such a repair ranges from 31% to 54% [3,4].The laparoscopic 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. 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 (5,6).The present study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion.

MATERIAL AND METHODS

The present study was conducted to assess results of laparoscopic ventral hernia repair using mesh insertion. This study was carried out in Govt Medical College and Hospital, Amritsar, Department of General Surgery during janury 2021 to october 2023. Before the commencement of the

study ethical approval was taken from the Ethical committee of the institute and written informed consent was obtained from all the patients.

INCLUSION CRITERIA

- Buldge at the hernial site or in the abdomen wall at the time of presentation.
- Any clinical evidence of acute abdomen due to ventral hernia . Preoperative evaluation included ultrasound, hematology, biochemistry, and pre-anesthesia check-ups. Pateints data was recorded according to Clavien classification [7].

LVHR technique as advised by LeBlanc used as Closure technique (8). Number 18 spinal needle was used to introduce a number 1 Prolene suture through its lumen into the abdominal cavity. Another spinal needle was used as a snare to catch the intra-abdominal suture and pull it out. This needle was threaded with no. 1 Prolene suture, which was tied back on its own end to form a loop . Once the defect was identified, the suturing was begun from one end of the hernia defect. Laproscopicaly hernia defect was close and mesh placed with sutures or tacker was used to fix mesh with abdominal wall then dressing was performed and abdomen was given a binder support. Patients were assessed for recovery from GA and were given sips of liquids after four or five hours post surgery. Once the patient could walk to toilets, take care of their garments, and pass urine they were discharged. Paracetamol 650 mg and additional analgesia, i.e., diclofenac was monitored by patient themselves if pain persisted. They were followed up for 2 days with instruction to progressively resume their diet from liquid to soft to normal in 2 days. Follow ups were done at third postoperative day, 1 week, 3 weeks, 3 months. Data were prospectively recorded in Microsoft Excel and analysed at study.

RESULTS

In the present study, 40 patients were operated by this technique. Mean operating time for LVHR was 90 mins. Lower abdomen hernia was the most common. Mean length of closed hernia defect was 9.2cm. in maximum patients buldge and pain complications were 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. Post operation, pain was present in 40 patients at suture site at 3rd day, in 3 patients after 1st week, in 1 patients after 3 week and in 0 patient after 3 months. No seroma was present in any patient.

Table1: Data collected before operation

Variables	
Operating Mean time (min)	90 min
Types of hernia	
Umbilical	10
Incisional	12
Lower abdomen	18
Upper abdomen	0
Mean Length of closed HD (cm)	
Number of defects	9.2
Complications	
Grade I	11
Grade II	4
Grade III/IV	0

Table 2: Data collected post Operation

Post-operative data	**3rd day**	**1st week**	**3rd week**	**3 months**
Pain				
Trocar site	40	5	0	0
Suture site	40	9	8	1
HD site	40	3	1	0
Seroma	0	0	0	0

DISCUSSION

Since the first report of Le Blanc K (1993) (9), laparoscopic ventral hernia repair has expanded worldwide in relation to benefits of the minimum invasive approach: absence of intraparietal dissection, absence of postoperative immobilization, lower risk of broncho-pulmonary complications, lesser abdominal pain and lesser abdominal wall complications respect to open technique; these clinical benefits were identified unequivocally by many retrospective and prospective comparative studies between laparoscopy and open hernia repair [10, 11, 12]. In the present study 40 patients were operated by

this technique. Mean operating time for LVHR 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 3rdday 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 3rdday, in 3 patients after 1st week, in 1 patient after 3 week and in 0 patient after 3 months. Seroma was not occurred. Generally, the operative time of LVHR is longer than the OVHR [13], although some authors reported no difference in the operative time when comparing the two techniques[14]. Trocar-site hernias or recurrence can occur within 4months [15] to over 10 years [16]. A follow-up of 3 years has been recommended by Le Blanc [8]. Pooled data analysis of LVHR vs. OVHR confirmed that injury to the bowel is more common in LVHR (2.9% vs. 1.2%) [17].

CONCLUSION

The present study concluded that laparoscopic ventral hernia repair using mesh is an effective and safe procedure with very low postoperative pain and recurrence. The first critical point is selection of patients for laparoscopic technique and must be done with careful preoperative clinical assesment and ultrasound findings of defect size; particular attention should be given in cases of incisional hernia for laproscopic port placement and the difficulty of laparoscopic technique in order to correctly fixing the mesh. Many authors suggested that the factors related to the patient and the surgical technique that may influence the onset of early or late recurrence as the follows: a defect size >5 cm (W2 of EHS classification), an overlap of the mesh < 5 cm, a BMI of 30 kg/m^2 or superior and the presence of significant comorbidities (ASA score: 3). Despite the advances noted above, open surgical technique is many times necessary where defect is very large and should not be overlooked. Improved postoperative evaluation is necessary to effectively weigh the results of our innovations, and continue to evolve solutions to ventral and incisional hernias.

Conflict of Interest: Nil
Source of support: Nil

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