

Comparison of Laparoscopic and Open Repair for Ventral Hernias Using Quality of Life Index

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Abstract

Background and Aim: Millions of patients are affected each year presenting with most commonly with primary ventral, incisional, and inguinal hernias. In this study we have made an attempt to study 200 cases of ventral hernias selected randomly from cases admitted to our hospital and compare quality of life between open and laparoscopic repair group during the post-operative period. *Material and Methods:* present study was the patients admitted to the medical institute in Gujarat in the department of Surgery. Patients underwent polypropylene mesh repair either Inlay repair or Onlay repair by open method. Laparoscopically mesh (dual layer mesh) was placed intraperitoneal after reduction of hernia. Both the group patients were followed up for 2 months. SF-8 scoring card was filled by the patient during follow-up at 1st month and 2nd month. *Results:* Paraumbilical hernia was present in 90 patients, incisional hernia was present in 36, epigastric hernia was present in 20 patient and 14 had umbilical hernia. However seroma was developed in 6 patients treated by laparoscopic means as compared to 18 patients in open repair wound. Surgical site infection was seen in 28 patients, 24 patients did underwent open mesh repair. There was post operative chronic pain at the operated site at the end of 2 months follow up. *Conclusion:* Laparoscopic ventral hernia repair provides lesser post-operative pain, lesser complications, shorter hospital stay and

lesser economic impact as they returned to returned to work early. Thus patients have less morbidity and improved quality of life.

Keywords: Hernia; Laparoscopic; Quality of Life; Ventral Hernias.

Introduction

Hernia is a word derived from a Greek word herons, meaning a branch or protrusion. A hernia is a protrusion of a viscus or part of a viscus through an abnormal opening in the walls of its containing cavity [1]. Abdominal wall hernias are familiar surgical problem. Millions of patients are affected each year presenting with most commonly with primary ventral, incisional, and inguinal hernias. Hernia may be either symptomatic or asymptomatic, and commonly cause pain or are aesthetically distressing [2]. These problems, coupled with the risk of obstruction & incarceration, are the most common reasons for patients seeking surgical repair of hernias [3].

Ventral and incisional hernia repair is one of the most mutual operations implemented in daily clinical practice. Incisional hernia is a common long-term complication of abdominal surgery and is estimated to occur in 11-20% of laparotomy incisions [4]. Almost 50% of incisional hernias develop within the first 2 years after the primary surgery, and 74% develop after 3 years. The reappearance rate of incisional hernia after primary suture repair is more than 50% and has been reduced to 10-23% after the introduction of prosthetic materials (meshes) in hernia repair [5].

As the result of surgical innovation, the field of

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hernia has improved and evolved and has been benefited significantly from technologic improvements. The tension-free repair of hernia is one of the key concepts in revolutionizing the hernia surgery [6]. The use of prosthetic mesh to repair the fascial defect has decreased in the recurrence rates of ventral and incisional hernias. Recently, the laparoscopic approaches for hernia have increased the options and approaches for repairing the defect [6].

Open hernia repair can be a main operation with significant morbidity affected by infectious complications. An increasing interest in laparoscopic surgery and the availability of new materials have encouraged the adoption of laparoscopic techniques in ventral hernia repair. In order to improve upon the recurrence rate of open mesh repair of incisional hernia, LeBlanc, in 1993, reported the first case of laparoscopic incisional hernia repair using a synthetic mesh [7].

To achieve outcomes incomparision with the open repair, laparoscopic repair of hernia demands for significant expertise. Placement of mesh in a sublay position has found to be effective and to have a low recurrences in ventral and incisional hernias, although randomized trials are limited [8]. In this study we have made an attempt to study 200 cases of ventral hernias selected randomly from cases admitted to our hospital and compare quality of life between open and laparoscopic repair group during the post-operative period.

Materials & Methods

The present study was conducted on the patients admitted to the medical institute in Gujarat. The present study was undertaken in the department of the surgery for the period of two year. The study was approved by ethics committee of the hospital and informed written consent was obtained from all patients. A simple random sampling was done for selecting the patients.

Patients with age between 18 years and 60 years were included in the study. Patients with severe comorbid conditions (severe cardiopulmonary disease, uncontrolled ascites), with pre-existing skin infection at surgical site, with multiple post-op scars, and patients undergoing emergency surgery were excluded from the study.

All patients underwent surgical procedure after following preoperative preparation. Informed written consent was obtained after explaining the surgical procedure and its results. Nil by mouth after 10:00 pm on the previous night of surgery. IM Injection tetanus toxoid 0.5ml Injection xylocaine

test dose. Preparation of the parts by shaving.

All patients received one dose of preoperative antibiotic, 1gm of 3rd generation cephalosporins during immediately after induction of anaesthesia. Patients were operated either under spinal anaesthesia or general anaesthesia. On operative table betadine scrub given to anterior abdominal wall. Patients underwent polypropylene mesh repair either Inlay repair or Onlay repair by open method. Laparoscopically mesh (dual layer mesh) was placed intraperitoneal after reduction of hernia. Both the group patients were followed up for 2 months. SF-8 scoring card was filled by the patient during follow-up at 1st month and 2nd month.

Statistical Methods

The Chi square and Fisher Exact test has been used for qualitative parameters. Student t-test has been used to find the significance of quantitative paramters. Mann Whitney U test is used for pain scoring comparision.

Results

When the age distributions of the patients were done in the study, the results showed that majority of the patients were in the age group of 30-50 years accounting to 65% of total cases. Youngest patient in the study was 24 years old and eldest patient was 68 year old. There were total of 100 male patients were included in our study corresponding to 50% of cases and there were 100 female patients participated in the study that account to 50%.

Distribution of patient in the present study was as followed: paraumbilical hernia was present in 90 patients, incisional hernia was present in 36, epigastric hernia was present in 20 patient and 14 had umbilical hernia. When the post operative movement was matched in both the groups it was found to be 1.5 days in laproscopic group and 2.5 days in open repair group. In term of complications, there was no post operative death, no pulmonary complications and no major cardiovascular. However seroma was developed in 6 patients treated by laproscopic means as compared to 18 patients in open repair wound. Surgical site infection was seen in 28 patients, 24 patients did underwent open mesh repair. There was post operative chronic pain at the operated site at the end of 2 months follow up.

Quality of life of patient was assessed using SF-8 scoring card given to the patient at the 1st month. The quality of life was assessed with 8 parameters.

Postoperatively there was significant improvement in the quality of life using SF-8 scoring system in laparoscopic group compared with the open group, in general health, in physical functioning of the patient, in economic impact, with respect to bodily pain, vitality of the patient and mental health of the patient.

Discussion

Laparoscopic ventral hernia repair was started by Le Blanc I 1993 [9]. After that, evaluations were done to make laparoscopic surgery easier and safer for ventral hernia repair. In this clinical study, 200 patients with ventral hernia were admitted and treated with different surgical procedures. The patients were randomized into two groups, laparoscopic and open. Patients were studied for clinical features, treatment, postoperative complications and quality of life pertaining to study period. Discussion is mainly concentrated on comparing quality of life between patients who underwent laparoscopic repair and open repair. The majority of the patients in the study were in the age group of 30-50 years accounting to 55% of total cases. Youngest patient in the study was 20 years old and eldest patient was 70 year old. Sex incidence in the study was matched between the two groups. 100 male patients were included in our study corresponding to 50% of cases (50 male patients in each group) and 100 female patients participated in the study accounting to 50% (50 female patients in each group). Paraumbilical hernia was the most common presentation in the patients, others being incisional hernia, epigastric hernia, umbilical hernia. Mean post-operative day of movement in laparoscopic group was 1.5 days and in open repair group was 2.5 days.

There were no post-operative deaths, no major cardiovascular, pulmonary complications. The main complication encountered were seroma, surgical site infection and chronic pain. Post-operatively patients of laparoscopic group returned back to the work early (mean 12.8 days) compared to open group (mean 18.5 days). Raftopoulos et al study showed mean day of return of work 25.95 vs 47.8 days which was higher compared to Kamal Itani et al study which showed mean of 23 vs 28.5 days [10].

Conclusion

Laparoscopic ventral hernia repair provides

lesser post-operative pain, lesser complications, shorter hospital stay and lesser economic impact as they returned to work early. Thus patients have less morbidity and improved quality of life. As most of our patients involved in the study were working class involving moderate to heavy work, laparoscopic repair meant lesser economic impact and decreased loss of man-power hours.

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Conflict of interest: None declared

References

1. Shivakumar K. Field block for inguinal hernia repair a clinical study. RGUHS. 2008.
2. Chand M, On J, Bevan K, Mostafid H, Venkatsubramaniam A. Mesh erosion following laparoscopic incisional hernia repair. *Hernia*. 2012;16:223-6.
3. Fevang BT, Fevang J, Stangeland L, Søreide O, Svanes K, Viste A. Complications and death after surgical treatment of small bowel obstruction: a 35-year institutional experience. *Annals of surgery*. 2000;231:529.
4. Alsadiqi R, Albishri A, Almaghrabi A, Aljedaani B, Alghamdi K, Alhijab F, Alsulami M, Hussain A, Alshaikh M, Jaad N. Laparoscopic versus open ventral hernia repair. *Int J Community Med Public Health*. 2018 Jul;5(7):2627-2631.
5. Anthony T, Bergen PC, Kim LT, Henderson M, Fahey T, Rege RV, Turnage RH. Factors affecting recurrence following incisional herniorrhaphy. *World journal of surgery*. 2000;24:95-101.
6. Gray SH, Hawn MT, Itani KM. Surgical progress in inguinal and ventral incisional hernia repair. *Surgical Clinics of North America*. 2008;88:17-26.
7. Asencio F, Aguiló J, Peiró S, Carbó J, Ferri R, Caro F, Ahmad M. Open randomized clinical trial of laparoscopic versus open incisional hernia repair. *Surgical endoscopy*. 2009;23:1441.
8. Köckerling F, Alam N, Antoniou S, Daniels IR, Famiglietti F, Fortelny R, Heiss M, Kallinowski F, Kyle-Leinhase I, Mayer F. What is the evidence for the use of biologic or biosynthetic meshes in abdominal wall reconstruction? *Hernia*. 2018:1-21.
9. LeBlanc KA, Booth WV, Whitaker JM, Bellanger DE. Laparoscopic incisional and ventral herniorrhaphy in 100 patients. *The American journal of surgery*. 2000;180:193-7.
10. Patil S. Comparison of open vs laparoscopic repair of uncomplicated ventral hernia using quality of life index. *Rajiv Gandhi University of Health Sciences*. 2014.