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ORIGINAL ARTICLE

Outcome of Laparoscopic Intra-Abdominal Ventral Hernia Repair with Tissue Separating Mesh

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ABSTRACT

Objective: To evaluate the outcome of laparoscopic Intra-abdominal Ventral Hernia Repair with Tissue Separating Mesh.

Methodology: Patients aged 18-60 years old with documented ASA grade I or II, ventral hernias >5 cm in size (clinically assessed by palpable expansile cough impulse and as abdominal wall defect on ultrasound), and no general contraindications to laparoscopy (such as bleeding disorders, low platelet counts, or prolonged clotting times) were excluded. Patients' permission was obtained after they were fully informed of the risks and benefits. Name, age, gender, and contact details were also recorded. After that, laparoscopic ventral hernia repair was performed. These surgeries were performed under general anaesthesia by a single surgical team led by a senior doctor with at least three years of expertise in laparoscopic surgery. The moment of incision served as the starting point. Tissue-separating mesh was inserted intraoperatively, and the operational time was recorded once again during closure. The patients were sent to the ward for further observation. Discharge documentation revealed a patient's postoperative hospital stay.

Results: Mean age of the patients was calculated as 37.03+11.32 years. The gender breakdown reveals that men as majority, with 51 (51%) compared to 49 (49%) females. The outcome of laparoscopic intra-abdominal ventral hernia repair using tissue Separating Mesh showed that the mean operation time was 116.21+8.27 minutes, and the length of hospital stay was documented as 2.4+0.38 days.

Conclusion: We concluded that outcome of laparoscopic Intra-abdominal Ventral Hernia Repair with Tissue Separating Mesh with regards to duration of operation and post operative hospital stay is feasible in our population

Keywords: Intra-abdominal Ventral Hernia Repair, Tissue Separating Mesh, outcome, post-operative hospital stay, duration of operation

INTRODUCTION

According to the results of radiographic imaging, between one-third and one-half of all people have a ventral hernia. This percentage may be determined by a physical examination. It is estimated that following abdominal surgery, up to one-third of patients will acquire an incisional hernia, and three years after ventral incisional hernia repair, as many as 43 percent of patients may develop a recurrent hernia [1,2]. Surgeons face a task that is often overlooked: the treatment of ventral hernias, both primary and incisional. Around 600,000 repairs for ventral hernias are done each year in the United States, and the total cost of these procedures is projected to reach 10 billion dollars by the year 2021 [3]. The introduction of new technology, unexpected repairs, and recurrent issues are all factors that lead to a rise in cost [4]. Hence, deliberate decision making during the perioperative period with respect to the optimisation of the patient, the surgical method, and the choice of mesh has the potential to save the costs associated with medical care [1,2,4].

Abdominal surgery has been revolutionised by laparoscopic operative therapies as a result of the many advantages that come along with it. These advantages include a smaller and more visually acceptable incision, less pain, and a shorter post-surgical hospital stay. [5] The correction of laparoscopic ventral hernias is becoming more commonplace around the world as the procedure gains popularity. [6] There is a significant issue with different treatment algorithms: during long-term follow-up, as much as 25% of laparotomy incisions develop a hernia. Because of the significant strides that have been achieved in laparoscopic ventral hernia repair over the last ten years, patients now have the option of selecting this method of treatment. [7]

Patients who undergo ventral hernia surgery without the use of prosthetic mesh should anticipate having poor results and a high chance of experiencing a recurrence of their condition. [8] Open repair necessitates extensive soft tissue dissection in tissues that are already of poor quality and flap creation, both of which increase the risk of complications and recurrence. While the use of prosthetic mesh to reinforce the abdominal wall without causing tension has helped reduce recurrence rates, open repair necessitates flap creation, which increases the risk of complications. Ventral hernias were repaired using a procedure that required just a small amount of incision in the hopes of allowing a quicker recovery with fewer postoperative complications and a decreased likelihood of the issue reoccurring. [9]

As a result of the tiny incisions that were necessary for the laparoscopic repair process, patients who had this kind of operation had a significantly reduced risk of wound infection. Nonetheless, there is a possibility of an increased risk of harm to intra-abdominal organs when undergoing laparoscopic surgery; however, in actual practise, this complication is very rare. Repair of hernias performed laparoscopically has been proven in the vast majority of trials to result in shorter hospital stays. [10]

The goal of this study is to determine whether or not laparoscopic intra-abdominal ventral hernia repair with tissue-separating mesh is an effective method of treating the condition. Laparoscopic treatment of ventral hernia typically leads in a shorter length of time spent in the hospital following surgery as well as a shorter amount of time spent in operation. This has been observed and documented in the body of published medical research. This, in turn, led to an increased number of benefits, such as a decreased infection rate, an earlier return to everyday activities, and a reduced risk of recurrence. Moreover, the number of patients who required hospitalisation was also reduced.

Nonetheless, open procedures are still conducted in the local practise since there is no local data available concerning the utilisation of laparoscopic surgeries to treat ventral hernia. This is due to the fact that laparoscopic surgeries need a longer recovery time. Throughout the course of this study, our major goal is to gather local data that, in the not too distant future, will make it possible for us to move from utilising open surgery to employing laparoscopic surgery for the treatment of ventral hernias. The results of this study will be of great assistance to us as we work to update our processes and rules in order to include strategies that are more productive into our system.

METHODOLOGY

Patients aged 18-60 years old with documented ASA grade I or II, ventral hernias >5 cm in size (clinically assessed by palpable expansile cough impulse and as abdominal wall defect on ultrasound), and no general contraindications to laparoscopy (such as bleeding disorders, low platelet counts, or prolonged clotting times) were excluded. Patients' permission was obtained after they were fully informed of the risks and benefits. Name, age, gender, and contact details were also recorded. After that, laparoscopic ventral hernia repair was performed. These surgeries were performed under general anaesthesia by a single surgical team led by a senior doctor with at least three years of expertise in laparoscopic surgery. The moment of incision served as the starting point. Tissue-separating mesh was inserted intraoperatively, and the operational time was recorded once again during closure. The patients were sent to the ward for further observation. Discharge documentation revealed a patient's postoperative hospital stay.

RESULTS

Mean age of the patients was calculated as 37.03+11.32 years. The gender breakdown reveals that men as majority, with 51 (51%) compared to 49 (49%) females. The outcome of laparoscopic intra-abdominal ventral hernia repair using tissue Separating Mesh showed that the mean operation time was 116.21+8.27 minutes, and the length of hospital stay was documented as 2.4+0.38 days.

Table 1: Age of the Patients

Age(years)	No. of patients	%
18-50	82	82
>50	18	18
Mean+SD	37.03+11.32	

Table 2: Gender of the Patients

Gender	No. of patients	%
Male	51	51
Female	49	49

Table 3: Outcome of Laparoscopic Intra-Abdominal Ventral Hernia Repair with Tissue Separating Mesh

Mean Operative time(mins)	116.21	8.27
Hospital stay(days)	2.4	0.38

DISCUSSION

By the use of intraperitoneal mesh fixation and with a little amount of dissection of the soft tissues, laparoscopic ventricular hernia repair(LVHR) is able to accomplish sufficient closure of the hernia defect. While these findings were not validated by another trial, the procedure has all of the benefits of the laparoscopic approach, such as reduced postoperative discomfort, speedier recovery, and shorter hospital stays and convalescence periods than the open ventricular hernia repair.[11] In addition, the patients report feeling less anxious and are able to tolerate oral intake sooner than they did following the open operation. Patients who undergo LVHR also stand to benefit significantly from the procedure's aesthetic side effects. The aesthetic advantage, on the other hand, is restricted for individuals who are having laparoscopic treatment of an incisional hernia.

In our study, mean age of the patients was calculated as 37.03+11.32 years. The gender breakdown reveals that men as majority, with 51 (51%) compared to 49 (49%) females. The outcome of laparoscopic intra-abdominal ventral hernia repair using tissue Separating Mesh showed that the mean operation time was 116.21+8.27 minutes, and the length of hospital stay was documented as 2.4+0.38 days.

According to Bhanot P and the other researchers who participated in the study, the mean operative time for laparoscopic intraabdominal ventral hernia repair was 11754 minutes, and the mean duration of stay was 1.93 days.[12] The findings of our study are consistent with those of the study that Bhanot P and the other researchers conducted.

Murlidhar Kalyan and his colleagues[13] examined the differences and similarities between open and laparoscopic hernia repair in terms of a variety of operating and patient factors. They found that the mean operative time for the laparoscopic group was 57.52 minutes with a standard deviation of 5.80 minutes, while the mean operative time for the open group was 59.8 minutes with a standard deviation of 11.15 minutes. There were a total of 50 patients who participated in the study. In the open group, the average length of hospital stay was 9.88 2.96 days, whereas the laparoscopic group had a mean hospital stay of 7.4 1.58 days (p-value = 0.0006; significant difference). Patients who had laparoscopic surgery experienced significantly less postoperative pain (as measured by the visual analogue scale score; the p-value for this finding was 0.001; it was significant). Seroma and infections at the surgical site were the most prevalent consequences, and they were seen more often in the group that had open hernia surgery. One of the cases that was worked on using the open method showed recurrence. They came to the conclusion that laparoscopic ventral hernia repair is technically safer, more effective, and practical, with improved clinical results in patients who were seeking treatment at a government hospital.

Nawaz Ali and others[14] a number of other researchers investigated the results of laparoscopic repair in cases of ventral hernia. They found that the average age of the patients was 46 years, 8.3 months. There were 52 girls, making up 60.4% of the total, while there were 34 men, making up 39.5%. The number of girls who need surgery due to a ventral wall hernia is much greater than the number of men. The individuals' mean body mass index was 30.8 4.3 kg/m2, according to the research. Bowel perforation is considered to be the most serious complication that may occur as a result of laparoscopy, and it occurred in 3.4% of the patients who participated in the study. The most prevalent post-operative consequence was severe pain, which affected 26.7% of patients. Patients were given intravenous and oral analgesics to treat their discomfort for two to three days, after which seroma development occurred. They came to the conclusion that laparoscopic ventral hernia repair is an outstanding procedure that is superior to traditional treatments and has less problems, although it does need surgical experience and certain tools. Even though it is an excellent method for treating minor hernias in the ventral wall, this surgery is not utilised to treat more complicated hernias.

We are of the view that as compared to more traditional methods, the repair of a ventral hernia using laparoscopic procedures is superior and results in a lower risk of complications. While it is an excellent method for treating uncomplicated hernias in the ventral wall, it is not appropriate for hernias that are more complex.

CONCLUSION

We came to the conclusion that the result of laparoscopic Intra-abdominal Ventral Hernia Repair with Tissue Separating Mesh with respect to the time of the operation and the post-operative hospital stay is achievable in our community.

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