



MESH HERNIOPLASTY IN OBSTRUCTED INGUINAL HERNIA

Surgery

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ABSTRACT

Background: Mesh Hernioplasty in patients undergoing emergency obstructed inguinal hernia repair is considered impractical, mostly because of potential infectious complications.

Objective: The main aim of this study was to assess the feasibility of Lichtenstein mesh hernioplasty in treating obstructed inguinal hernias.

Material: This study was undertaken in the department of General Surgery SKIMS Medical College Hospital from July 2014 to March 2018. 39 patients were included in the study. All patients underwent Lichtenstein mesh hernioplasty for obstructed inguinal hernia in emergency operating room.

Results: 6 patients (15.38%) developed seroma which was managed by adequate drainage. 4 (10.25%) patients had culture proven wound site infection but responded well to local drainage and antibiotics. 2 (5.12%) patients developed systemic sepsis. 4 patients (10.25%) developed recurrence over a follow-up period of 1 year.

Conclusions: Mesh repairs can be safely performed in obstructed/ incarcerated inguinal hernias.

KEYWORDS

Introduction:

Hernias are among the oldest recorded afflictions of humans, and inguinal hernia repair is one of the most common general surgical procedures⁽¹⁾. Inguinal hernias comprise 70% to 75% of all abdominal wall hernias and are more common in men⁽²⁾. In 1984 Lichtenstein addressed the issue of tension by popularizing the routine use of mesh, coining the term 'tension-free hernioplasty'. Many suture-based hernia repairs have been described (e.g. Bassini and Shouldice) and in expert hands the Shouldice repair has equivalence to a mesh repair, but in a more general surgical practice it is associated with recurrence rates of up to 15%. A meta-analysis from the EU Hernia Trialists Collaboration compared mesh repair with sutured techniques⁽³⁾. Recurrence was less common after a mesh repair (odds ratio 0.43, 95% confidence interval, 0.34e0.55). Mesh implantation works by inducing progressive ingrowth of fibrous tissue that begins within two weeks and continues up to twelve weeks, giving strength to the weakened tissue. A repair using mesh is therefore always indicated unless there is a significant risk of mesh infection, such as the requirement for a bowel resection during a strangulated hernia repair. In recent years, Lichtenstein tension-free mesh-based repair has become the criterion standard for elective hernia repair⁽⁴⁾. Numerous permanent meshes are available, with no convincing data establishing the superiority of any particular brand/mesh type. Most meshes, in particular the modern large-pore designs with minimal inflammatory stimulus are well tolerated in the tissues of majority of the patients, a few problems may still arise, these usually involve bacterial infection in contaminated areas or mesh migration with erosion of adjacent organs⁽⁴⁾.

Among patients with inguinal hernia, about 5% - 15% undergo emergency surgery because of complications⁽⁶⁾. The most frequently encountered complications are incarceration and strangulation. Incarcerated inguinal hernia (IIH) is one of the most frequent acute abdomen disorders, and most patients with IIH need emergency operation. The results from several meta-analyses have shown that the use of mesh is better to the non-mesh repairs in inguinal hernia surgery. In complicated hernias with obstruction, the use of mesh is presumed to further increase the risk of infections, but recent publications show that the mesh is safe and it does not increase infection risk⁽⁴⁾. In the setting of bowel incarceration, if there is no ischemia and no need for resection, use of permanent mesh is still relatively safe^(7,8).

The main aim of this study was to assess the feasibility of Lichtenstein mesh hernioplasty in treating obstructed inguinal hernias. Primary outcome measures were post-operative wound site infection, seroma formation, sepsis and recurrence upto 1 year.

Material:

This prospective non-randomised study was undertaken in the

department of General Surgery Sher-i-Kashmir Institute of Medical Sciences Medical College Hospital from July 2014 to March 2018. 46 patients underwent emergency hernia repair from July 2014 to March 2017. Two patients had strangulated hernia and underwent bowel resection with primary tissue repair. 5 patients were lost to follow up. Thus, 39 patients were included in the study. All these patients underwent Lichtenstein mesh hernioplasty for obstructed inguinal hernia in emergency operating room under spinal anaesthesia. Patients received Amoxicillin/ clavulanate antibiotic preoperatively and continued for 2-3 days post-operatively. All these patients were followed up for a period of 1 year (March 2018). Post-operative wound site infection, seroma formation, sepsis and recurrence within 1 year was observed. Bard (Marlex) mesh was used in all cases.

Results:

Our study population was predominantly males (38 cases) with only one female patient. Mean age of patients was 47.4 years with standard deviation of 8.1 years. Average postoperative hospital stay was 5.6 days (Range = 2-18 days). 6 patients (15.38%) developed seroma in the post-operative period which was managed by adequate drainage. 4 patients (10.25%) had culture proven wound site infection but responded well to local drainage and antibiotics. 2 (5.12%) patients developed systemic sepsis due to local wound site infection and required re-exploration with removal of mesh, thorough cleansing of wound and primary tissue repair of posterior wall of inguinal canal. 4 patients (10.25%) developed recurrence over a follow-up period of 1 year.

Discussion:

Inguinal hernias comprise 70% to 75% of all abdominal wall hernias and are more common in men, whereas femoral hernias account for less than 5% and are more common in women^(2,9). Overall, 96% of groin hernias are inguinal and 4% are femoral. These hernias are more common in men. The lifetime risk of developing a groin hernia is 25% in men, but less than 5% in women. Men are also 20-fold more likely to need a hernia repair. Our findings are in concordance with the same in terms of male predominance. The literature data show that hernia incarceration occurs in 8% to 15% of patients with inguinal hernias⁽¹⁰⁻¹³⁾. The mean age of those patients is usually above 60 years of age⁽¹³⁾. In our study, we found that mean age is 47.4 years. The lower mean age can be due to early presentation and prompt intervention in our set up. Duration of hospital stay in our study was comparable to Shahbaz Habib Faridi et al⁽¹⁴⁾.

Seroma formation was found to be 15.38% in our study and was treated with drainage and dressings alone. None required any further intervention. Shahbaz Habib Faridi et al noted incidence of 12.7% for

seroma formation while Lorant Kiss et al found it to be 10%^(14,15). Lorant Kiss et al found that incidence of wound infection is 10% in their study which is similar to our findings. These patients were managed with local wound care and culture directed antibiotics. Two patients (5.12%) in our study developed systemic sepsis ascribed to deep wound site infection and required re-exploration with removal of mesh, thorough cleansing of wound and primary tissue repair of posterior wall of inguinal canal. Both these patients were diabetic. The management of wound infection in which there is a synthetic prosthesis is not different from that of infected wound⁽¹⁶⁾ and wound infection in diabetic patients has been reported as a cofactor⁽¹⁷⁾.

In our study, 4 patients (10.25%) developed recurrence over a follow-up period of 1 year. Lorant Kiss et al recorded no recurrence over a follow up period of two years⁽¹⁵⁾. Bader Hamza Shirah et al in their study also recorded no recurrence over a follow up period of 3 years⁽¹⁸⁾. However, their study was for uncomplicated hernia repair. The higher rate of recurrence in our study may be ascribed to the relative inexperience of operating surgeon. Incidence of recurrent hernia after primary repair varies from 1% in specialized centres to 30% in general survey; most are within 2–3 years after primary repair⁽¹⁹⁾. Thus, mesh repairs seem to have lower recurrence rates even in emergency situations. Recurrence after mesh hernia repair is related to technical factors such as inadequate dissection, insufficient prosthesis size and fixation, and surgeon skill⁽²⁰⁾. Any theoretical objection to mesh such as foreign body rejection or untreatable infection that require mesh removal were not substantial, and the use of mesh did not appear to increase the incidence of infection or alter the incidence of superficial wound infection⁽²¹⁾.

An overall morbidity and complication rate in hernia repair seems to be multi-factorial whether primary or mesh repair is done. Mere presence of incarceration is not to be taken as a contraindication for mesh repair. In a systematic review by Dirk Weyhe et al based on 571,445 hernia repairs reported in 39 publications, they identified the following potential risk factors: patient age, ASA score, diabetes, smoking, mode of admission (emergency vs. elective surgery), surgery in low resource settings, type of anesthesia, and (in men) bilateral and sliding hernias⁽²²⁾.

Conclusion:

We conclude that Lichtenstein Mesh Hernioplasty is a feasible and safe option for incarcerated inguinal hernia repair in emergency settings. However, patient selection and surgeon experience are important factors for the outcome.

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