



PREVENTS POST-OPERATIVE COMPLICATIONS IN HERNIOPLASTY USING MINIVAC DRAIN – A CASE STUDY

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INTRODUCTION

The concept of hernia repair with synthetic mesh was introduced by Lichtenstein in 1989, this procedure is the gold standard in open hernia surgery. The outcome of hernia surgery is generally favourable. The operation can have complications such as seroma formation, hematoma formation, mesh infection, wound dehiscence, recurrences. Some surgeons use drains indiscriminately, whereas others use them selectively. If seroma or hematoma forms it is managed by the aspiration, compression, surgical drains. Close wound drainage device under negative pressure is recommended in surgery with cases of difficult dissection, elderly patients, and patients on blood thinners tab aspirin tab Clopidogrel. The drain has been provided with a radio-opaque line for X-ray visualization. The Burr free smooth eyes at the distal end for efficient trauma free performance. It is very easy to use by one person to depress the chamber to activate the suction of bellow unit. Bellow unit capacity 50 ml. When required 3, 4 holes can be punched at the end of the tube where it will be inserted into the wound. The tube of the is passed into the surgical wound through a separate incision until all holes are inside the surgical wound and fixed in place by a stay suture to the skin. Then negative pressure is applied to the reservoir and surgical wound is closed. When the reservoir is filled with the draining fluid, to maintain effective suction drainage of the surgical wound, the roller clamp is locked. The reservoir is evacuated and the roller clamp is opened. This simple mini-vacuum drainage device is a very effective and simple method of closed-vacuum drainage.

AIMS AND OBJECTIVE

Prevents Post-Operative Complications In Hernioplasty Using Minivac Drain. The Negative Suction Drain Is Recommended In Cases Of Difficult Dissection, Elderly Patients, And Patients On Blood Thinners Tab Aspirin, Tab Clopidogrel.

MATERIALS AND METHOD



The patients coming to the outpatient department with inguinal hernia who underwent hernioplasty on an elective basis were selected.

Inclusion criteria

Patients undergoing inguinal hernia repair with an age ranging from 18 to 70 years were included with difficult dissection, elderly patients, and patients on blood thinners tab aspirin, tab clopidogrel.

Exclusion criteria

The patient with the following conditions was excluded.

- 1) Patient with uncontrolled diabetes mellitus, kidney disease, and immunocompromised disease congestive cardiac failure, hypertension, chronic liver disease.
- 2) Patient with irreducible hernia.
- 3) Patient undergoing operation for strangulation and obstruction.
- 4) Patient undergoing recurrent hernia surgery.

OPERATIVE PROCEDURE

All surgeries were done under regional anaesthesia (spinal anaesthesia). Injection of ceftriaxone 1 g IV STAT was given 30 min before taking the incision. Incision of about 6 cm taken 2 cm above the line joining the pubic tubercle to the mid-point of the inguinal ligament, incision deepened in layers. External oblique aponeurosis incised till the superficial inguinal ring, the ilioinguinal nerve identified and preserved, cord structures were hooked and dissected up to the deep ring. In indirect hernia, the cremasteric and internal spermatic fascia was identified and incised, the sac was identified and cord structures were separated, the sac was opened and contents reduced, purse string sutures were taken, and the sac was transfixed close to the deep ring. Posterior wall repair was done using Prolene No. 2 sutures. For direct hernias, the sac was reduced, and the posterior wall repair was done using Prolene No. 2 sutures. A 6×11 cm Polypropylene mesh was used for posterior wall repair. Mesh sutured to pubic tubercle, reflected part of inguinal ligament, conjoint tendon using 2.0 polypropylene sutures, and hemostasis achieved. A negative suction drain was inserted over the mesh reaching the neck of the scrotum below the external oblique aponeurosis and fixed to the skin. External oblique aponeurosis is closed with Vicryl 2.0 sutures. Skin is sutured with prolene no 2. The wound and the drain dressing were done separately.

Post-operative period

All patients were given Injection diclofenac 75 mg aqueous twice daily for 5 days. Injection Pantaprazole 40 mg once in a day. The patient was discharged after opening dressing on the 5th post-operative day, who was tolerating orally and became self-ambulatory. In patients in whom drain was kept, proper functioning of the drain was checked regularly, and emptying at regular intervals was noted. When the output is <20 mL/day for 3 consecutive days drain was removed. Patients who had the complication of wound infection, sutures were removed at the most dependent position, and pus/seroma fluid was drained and sent for culture and sensitivity, and based on culture and sensitivity, treatment was given.

Seroma -It is seen that seroma formation was reduced in the drain. **Hematoma** It was seen that complication of hematoma was significant less in patients with drain whereas hematoma was diagnosed when there was a collection of blood in the dead space related to the surgical bed at least three cm in diameter.

Distribution of post-operative complications- It was seen that surgical site infection rates were less in the drain group, but this was not statistically significant.

Average hospital stay - It was noted that the average length of hospital stay in patients without infection was comparatively low. This suggests a potential benefit of drain use in reducing the length of stay when complications are minimized.

DISCUSSION

Open surgeries for inguinal hernias are the most common procedures performed by surgeons. It is the simplest operation to be done by surgeons in the beginning of their career. The standardized anatomical landmarks, reproducible technique, and relatively low complication rates make it an ideal initial procedure for surgical trainees. The most common complications after open mesh incisional hernia repairs are surgical site infections and collections. These complications not only delay recovery but also increase healthcare costs and the risk of long-term recurrence. Drains can also be considered in cases with extensive dissection, obesity, immunosuppression, or anticoagulant use, prior mesh infections. In all of which are risk factors for Fluid collection. The prophylactic use of drains may help detect early complications and reduce the need for reoperation and foreign body reaction due to polypropylene mesh. Since collected seroma or hematoma in the surgical site provides a medium for infection, negative suction drainage is advisable over the mesh and under the external oblique sheath to drain accumulating fluid. This technique creates a closed, sterile environment that reduces bacterial colonization risk. Negative suction drains also promote tissue apposition, enhance local perfusion, and reduce inflammatory response, thereby potentially improving wound healing outcomes. advantages, including early detection of bleeding and drainage of postoperative fluid collections. Negative pressure helps collapse potential dead space, particularly in elderly or debilitated patients, reducing wound infection and dehiscence and, consequently, lowering the risk of hernia recurrence.

CONCLUSION

From the study, it is concluded that keeping a drain in hernioplasty is beneficial in complications associated with Seroma and Hematoma formation and reduction in hospital stay, but no significant difference in pain post-surgery. At the end of the study, we can conclude that the patients with a drain benefited in the form of less chances of seroma and hematoma.

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