

**CASE REPORT****Drain Site Hernia – A Rare Case Report**<sup>1</sup>Dr. Karanbir Singh, <sup>2</sup>Dr. Shreya Chopra, <sup>3</sup>Dr. Navdeep Singh Saini<sup>1</sup>Senior Resident, AIMS Mohali<sup>2</sup>Senior Resident, AIMS Mohali<sup>3</sup>Professor, AIMS Mohali**Corresponding Author**

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**ABSTRACT**

Drain site hernia is a rare but potentially dangerous complication of open/ laparoscopic abdominal surgery. It may be difficult to diagnose due to its low incidence but can cause significant morbidity for the patient. It warrants judicious use of drains in abdominal surgeries and proper care and closure of drain site.

**Keywords:** laparoscopic, abdominal, dangerous

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**INTRODUCTION**

The efficacy and safety of using abdominal drains following abdominal surgery have been contentious. Surgical drains are believed to prevent fluid accumulation such as peritoneal fluid, blood, pus, or inflammatory exudates. It also helps detect anastomotic leakage. Drain site hernia is a rare but potentially dangerous complication of open as well as minimally invasive surgery and can lead to life-threatening consequences. In clinical practice, fascial-muscular and peritoneal defects at the drain-site are often left open to allow the drain to pass through, which facilitates the formation of a drain-site hernia.<sup>1</sup> Small bowel herniation through the drain site can be a rare and long term complication of abdominal drain insertion.<sup>2</sup> The optimal approach to close drain-site incision is still unclear, leading to the occurrence of hernia occasionally and resulting in potentially disastrous consequences.<sup>3</sup> Here we present a case of a drain site hernia following two abdominal surgeries with a review of literature and ways to prevent its development.

**CASE REPORT**

A 62-year-old female, a known case of hypertension on regular treatment, presented to surgery OPD with

chief complaint of dull aching pain in the right lumbar region since 2 years. The patient had previously undergone hysterectomy due to fibroid uterus in 2018. Subsequently, as a complication of the same she developed an ileovaginal fistula for which she underwent an exploratory laparotomy at an outside hospital with repair of ileovaginal fistula in September 2022. Intraoperatively, a pelvic drain was inserted and was brought out through right lumbar area. As per patient history and records, the drain was removed on post-operative day 7 and the drain site was left open to heal via secondary intention. On examination, there was a palpable swelling approximately 2x2 cm in size in the right lumbar region. A scar mark was seen 1 cm lateral to the swelling. The swelling was non reducible with mild tenderness over the swelling and cough impulse was absent. The patient underwent ultrasound of the abdomen which was suggestive of right drain site incarcerated hernia approximately 6.5 mm in diameter with omentum as content. Routine pre-operative blood investigations were unremarkable. After pre-anaesthetic checkup, she was taken up for hernia repair. Intra-operatively, a 2x2 cm defect was identified with incarcerated omentum as content. The hernia sac was excised along with its contents and mesh hernioplasty was done.

**Post operatively, the patient was relieved of her symptoms and is doing well.**



## DISCUSSION

Drains have been used in surgical practice since the time of Hippocrates in 460-377 BC. There are different types of drains which may be classified as open or closed drains. Drain site hernia after abdominal surgery is a long term and rare complication of drain insertion. However, a few cases have been reported in the past. There have been reported cases of incarcerated perforated Richter's hernia through a drain site as well as cases of bowel perforation due to pressure necrosis caused by open silicon drain. Commonly involved intestinal segments seen are small bowel and appendix. Increased morbidity and mortality have been noted in patients with drain site hernia especially if strangulation of the loops of bowel sets in. Most reported cases involved a drain site with an external diameter of greater than 10mm and the herniation of loops of bowel commonly occur within two weeks of removal of the drain. Drain site hernia occurs more commonly following laparoscopic surgery. Makama J G et al. studied 49 cases of drain site hernia and found that 42 of them were following laparoscopic surgery and the rest were at the site of drain following open abdominal surgery.<sup>4</sup> Patients with certain predisposing factors are at a higher risk of developing drain site hernia and its associated complications. The best way of preventing Drain site hernias and other complications is to avoid unnecessary placement of abdominal drains. Cases that essentially need drains should be carefully selected as an experimental study showed that, when a drain is inserted in the peritoneal cavity that contains no fluids, it is quickly surrounded by omentum and completely occluded within 48 hours.<sup>5</sup> Therefore the purpose of the drain is lost. Samarawickrama et al suggested that prophylactic measures to prevent drain complications should apply at three stages. Firstly, during selection of the appropriate drain, secondly use of correct technique during insertion and removal, thirdly remember to remove the drain as soon as it served the function. Complications like infections are seen in open drains. It is advisable to use a closed system of drainage. The factors that delay wound healing such as poor nutritional status, wound infection, certain drugs like steroid and chemotherapeutic agents, some comorbidities like diabetes mellitus, prolong surgery, obesity and injury to motor nerve are also known to cause drain site hernia.<sup>6,7,8</sup> Direct stab on the peritoneum rather than allowing peritoneum to stretch and cut during insertion of the drain also predispose to hernia as the

drain site wound directly continue with the external skin defect for the drain. Other complications like hernias and evisceration leading to strangulation are more with large calibre (10 mm) drains, therefore, smaller caliber drains should be preferred when possible.<sup>9</sup> It is advisable to apply a purse string suture when drain is taken through 10 mm port site which should always be closed under vision.<sup>10</sup> Some authors also recommend applying a purse string suture for the closure of the site after drain removal.<sup>11</sup> Many authors describe similar sort of technique to be used during insertion which is to insert the drain in a way that the skin and muscle layers are cut and pierced by the drain while allowing peritoneum to stretch and pierce at a different points so that the internal and external opening at drain hole placed at two different lines.<sup>7,12</sup> Some authors describe this as non-symmetric insertion or a 'Z' insertion method.<sup>11</sup> This allows internal and external opening superimposed and closed when the drain is removed. Alternatively, one can use the technique of gradual removal of the drain over a few days allowing the drain site to heal gradually from depth.<sup>7</sup> One must remember to remove the drain as soon as it served its purpose. It is better to use tubes with a smaller caliber, fewer and diminutive side holes if needed. Simultaneously, to prevent the suction effect, the drainage tube should remain clamped until the completion of air decompression. Aggressive drain extraction inevitably aggravates wound pain and increases intra-abdominal pressure, as well as the rate of visceral injury and bleeding. Therefore, it is better to remove the drainage tube gradually, rather than aggressively. It is strongly recommended to conduct a clockwise or counterclockwise rotation of the tube until free from the adhesion before removal of the drainage tube.<sup>13</sup>

## CONCLUSION

Insertion of a drain is a common procedure after many types of surgeries. Although its purpose is to minimize post-surgical complications and morbidity of the patient it has its own complications increasing patient's morbidities. Drain site hernia must be kept in mind during the differential diagnosis of post abdominal surgery obstruction, especially after the removal of the drainage tube, to avoid the serious consequences caused by delayed diagnosis. Furthermore, all abdomen layers should be carefully closed under direct vision at the trocar port site, especially where the drainage tube was placed. Therefore, it is very important to know the presence

of such complications and their predisposing factors so that surgeons can take measures to prevent certain disastrous complications.

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