

# Tissue Repair in the Emergency Management of Para-Umbilical Hernia: A Case Report

Sandeep Verma<sup>1</sup>, Vedit<sup>2</sup>, Arnav<sup>3</sup>, Rituparna<sup>4</sup>, Bhavinder K Arora<sup>5</sup>

<sup>1</sup>Senior Resident Department of General Surgery, PGIMS Rohtak (Corresponding Author)

<sup>2</sup>Junior Resident Department of General Surgery, PGIMS Rohtak (Corresponding Author)

<sup>3</sup>Junior Resident Department of General Surgery, PGIMS Rohtak

<sup>4</sup>Emergency Medical Officer, SPS Hospitals, Ludhiana

<sup>5</sup>Professor, Department of General Surgery, PGIMS Rohtak

**Abstract:** *Hernias are abnormal bulges or openings in the fascia of the abdominal wall which can be present in any area of the abdominal wall fascia. Most common location of hernias are on the anterior abdominal wall (umbilical) and groin regions (inguinal, femoral). These are characterized as; reducible when the contents within the hernia can be placed intra-abdominally through the layers of the abdominal wall, incarcerated when contents of the hernia are not able to be reduced and strangulated hernia occurs when the hernia contents are ischemic due to a compromised blood supply. We are presenting case of 63-year gentleman diagnosed with strangulated paraumbilical hernia, who underwent laparotomy with resection and anastomosis and primary closure of defect in intermittent fashion.*

**Keywords:** Strangulation, paraumbilical, ADPKD, resection and anastomosis, primary repair

## 1. Introduction

Hernias are abnormal bulges or openings in the fascia of the abdominal wall which can be present in any area of the abdominal wall fascia. Most common location of hernias are on the anterior abdominal wall (umbilical) and groin regions (inguinal, femoral). These are characterized as; reducible when the contents within the hernia can be placed intra-abdominally through the layers of the abdominal wall, incarcerated when contents of the hernia are not able to be reduced and strangulated hernia occurs when the hernia contents are ischemic due to a compromised blood supply [1].

Strangulation occurs more commonly through a small opening in the musculature and a significant quantity of contents within the hernia itself. It is estimated that 5% of individuals will develop an abdominal wall hernia over their lifetime. Umbilical and inguinal hernias are often present at birth and can enlarge over time [2].

As compare to other ventral hernias, para-umbilical hernia (PUH) is a relatively common condition which is an acquired defect in over 90% of cases which is seen mainly in obese patients, multiparous women and in patients with cirrhosis [3].

## 2. Case Presentation

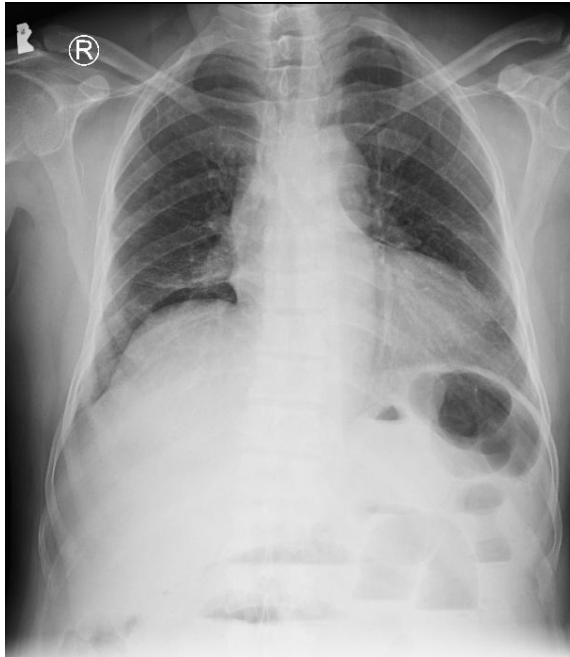
63-year gentleman came with chief complaint of swelling in supraumbilical area which was reducible for last 3-4 years but irreducible for last 3 days. He had history of pain in swelling, abdominal distension, bilious vomiting, non-passage of stool and flatus for last 3 days. He is known case of autosomal dominant polycystic kidney disease (ADPKD) for last 5-6 years, hypertension for 2 years on irregular

medications. On examination, he was tachycardiac, afebrile, blood pressure was 160/90 millimeter of mercury. Chest was having bilateral crepitus and per abdomen a tender swelling in supraumbilical area, no skin discoloration, absent cough impulse with raised bowel sounds.



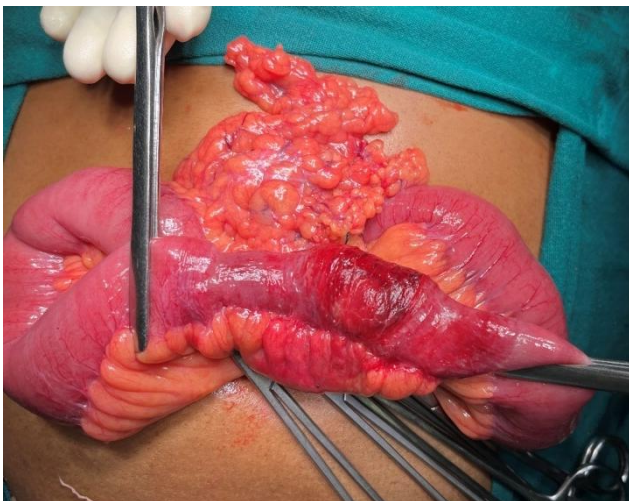
**Figure 1:** Picture showing obstructed supraumbilical hernia

Patient immediately resuscitated with intravenous fluids, analgesics, antibiotics, nasogastric tube insertion, Foley's catheterization. Xray abdomen revealed multiple air fluids levels (figure 2).



**Figure 2:** Xray abdomen showing multiple air fluids level and dilated small bowel.

Patient immediately planned for laparotomy. Patient was taken for surgery with consent of stoma, resection & anastomosis and high risk due to ADPKD. He immediately underwent laparotomy with transverse incision 2 cm above umbilicus, hernial sac was separated from surrounding structure. There was gangrenous patch with surrounding oedema approximately 70 cm proximal to duodenojejunal junction (figure 3).



**Figure 3:** Intraoperative picture showing gangrenous incarcerated patch in jejunum

Resection of the 10cm of that oedematous segment including the gangrenous patch. Side to side anastomosis with the linear cutter stapler (NTLC) was done. Intra-abdominal drain was inserted, 4cm defect was repaired with proline no 1 in intermittent fashion and subcutaneous drain 14F was inserted. Postoperatively physician opinion was done in view of electromyogram (ECG) changes, ADPKD and managed accordingly. Postoperatively he remained comfortable, NG removed on POD 3, passed stool and flatus on POD 3, enteral feed gradually progressed. Patient

recuperated well, discharged on POD-7. Follow up remained uneventful.

### 3. Discussion

Acute intestinal obstruction is an emergency and potentially life-threatening common clinical condition. It is characterized by the partial or complete blockage of the normal flow of intestinal contents which is classified into mechanical (e. g., hernias, adhesions, tumours) and functional (e. g., paralytic ileus) causes. This case report represents, the patient's condition was attributed to a mechanical obstruction caused by an irreducible incarcerated para-umbilical hernia [4, 5].

Obstructed incarcerated para-umbilical hernia is a surgical emergency that requires prompt diagnosis and surgical intervention due to the potential for life-threatening complications [5].

Para-umbilical hernias are defined as when abdominal contents protrude through a weakened area or defect in the abdominal wall near the umbilicus. Most para-umbilical hernias are reducible, they can become incarcerated and, in severe cases, strangulated. Strangulated hernias are surgical emergencies which requires prompt early diagnosis and management due to the risk of bowel perforation, ischemia and necrosis [6].

Strangulated para-umbilical hernias typically present with multiple symptoms and signs such as severe abdominal pain, nausea, vomiting, and constipation which reflect the compromised blood supply to the herniated contents. The clinical examination reveals tenderness over the hernia site, erythema, and signs of systemic inflammation, such as fever and tachycardia. Strangulation of the hernial content can lead to ischemia, gangrene, and perforation of the affected bowel [7, 8].

Radiological modalities such as abdominal X-rays presence of multiple air-fluid levels, are valuable tools for diagnosing bowel obstruction. Ultrasonography report talks about size of defect, extent of herniation of omentum and bowel with compromised blood supply; collection noted in hernial sac. With advancement, computed tomography (CT) scans can provide detailed information about the location and extent of the hernia, as well as the viability of the herniated bowel segment [8, 9]

The treatment of choice for strangulated para-umbilical hernias is surgical intervention. Surgical intervention can be done either open or laparoscopic methods. The goals of surgery are to relieve the obstruction, resect the non-viable bowel segment, and perform an anastomosis to restore intestinal continuity. In this case report, the patient underwent resection of the gangrenous bowel segment and side-to-side anastomosis, a common approach to managing bowel necrosis [10]. The choice of surgical technique depends on the extent of ischemia and the patient's overall condition. Close monitoring of the patient is crucial during post operative period which includes assessing bowel function, managing pain, preventing complications such as infection or hernia recurrence, and addressing any

underlying medical conditions, such as the patient's altered liver texture and bilateral polycystic kidney disease. In some cases, proximal temporary colostomy or ileostomy may be required to allow the anastomosis for better outcome of patients with multiple co-morbidities. With advancement, Laparoscopic procedures gained importance for better outcome, reduces morbidity and mortality. [11, 12].

#### 4. Conclusion

This case emphasizes the importance of early recognizing, evaluation and promptly surgically managing strangulated umbilical hernias with gangrenous bowel, which requires immediate intervention to prevent life-threatening complications. The mainstay of treatment of strangulated para-umbilical hernia is surgical resection and anastomosis. Postoperative care is essential to ensure optimal recovery and outcome with multidisciplinary approach for the management of associated comorbidities.

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