



BULLHORN LUMBAR HERNIA- A LAPAROSCOPIC REPAIR OF RARE DISEASE

General Surgery

Dr Saif Khan

Junior resident, Department of General Surgery, AIIMS, Bhopal.

Dr Shyam Lal

Professor, Department of General Surgery, AIIMS, Bhopal-462020. ORCID- 0000-0002-6966-8864

ABSTRACT

Background: Traumatic abdominal wall hernia (TAWH) is an uncommon complication of blunt trauma, often missed due to intact skin despite disruption of deeper muscle and fascial layers. Bullhorn injury-related TAWH is even rarer, with only a few cases reported worldwide. **Case Presentation:** A 55-year-old male presented with a reducible swelling over the left lumbar region, one year after sustaining a penetrating bullhorn injury that had been primarily sutured. Clinical examination and imaging (X-ray and NCCT abdomen) confirmed a 3×3 cm defect between the ninth and tenth ribs containing omentum and descending colon. The patient underwent elective laparoscopic Intra-Peritoneal Onlay Mesh Repair Plus (IPOM Plus) with primary defect closure using polypropylene sutures and fixation of a composite mesh. Post-operative recovery was uneventful, and no recurrence was noted till 1 year of follow-up. **Discussion:** TAWH due to bullhorn impact is a rare entity that requires a high index of suspicion and radiological confirmation. Laparoscopic repair allows precise anatomical delineation, tension-free closure, and faster recovery. **Conclusion:** Laparoscopic IPOM Plus offers a safe and effective minimally invasive option for managing traumatic bullhorn hernias, ensuring durable repair and preservation of abdominal wall integrity.

KEYWORDS

bull horn injury; traumatic lumbar hernia; laparoscopic repair; IPOM Plus

INTRODUCTION -

Traumatic abdominal wall hernia (TAWH) is an uncommonly encountered condition despite being high prevalence of blunt trauma abdomen¹. Traumatic bullhorn hernia occurs as a result of a direct blow to the abdominal wall, i.e., blunt trauma abdomen by the horn of a bull, which disrupts the muscles and fascia and leads to hernia formation. Skin can be bruised, but normally remains intact². Only a few reported cases were found in our literature review, which was managed by elective or emergency herniorrhaphy with or without mesh placement. In the context of the present era of minimal access approach, we report a unique case of a 55-year-old man who was hit by a bull with subsequent formation of hernia at the impact site, which was managed successfully by "laparoscopic Intra Peritoneal Onlay Mesh Repair Plus" (IPOM Plus), which is the 1st reported case in the literature.

Case Report -

A 55-year-old male presented with a history of penetrating bullhorn injury over the left lumbar region for which primary closure was done 1 year back. After 2 months, he developed a herniation over the surgical wound. The patient also had a history of an exploratory laparotomy with repair of bowel perforation 20 years back.

On examination, a doughy swelling of 6x5 cm was seen over the left lumbar region in the mid-axillary line with a healed scar over the swelling. The swelling is completely reducible with a gurgling sound with a palpable defect of around 4x3cm between the 9th and 10th rib, left side in mid-axillary line (Figure 1). The findings from the initial laboratory studies were normal. Patient is hemodynamically stable on presentation.

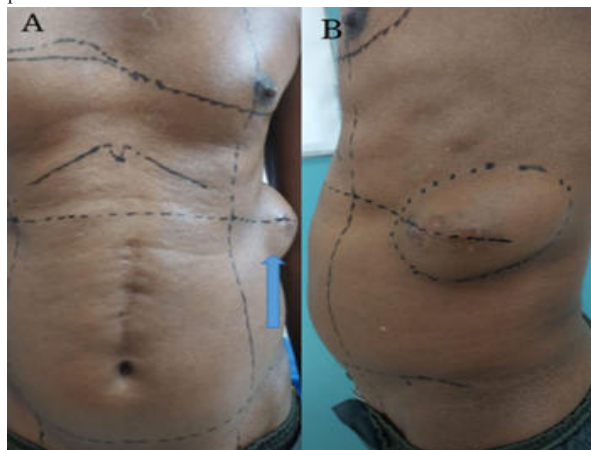


Figure 1- Left Lumbar Hernia

Chest X-ray was suggestive of protrusion of hollow viscus between the 9th and 10th rib from the left lumbar region (Figure 2A).

Ultrasonography shows a defect of size 3 cm noted in left lumbar region with bowel loops as content. NCCT Abdomen was s/o Left lumbar hernia with omentum, splenic flexure and proximal descending colon as the herniating content with a defect size of 3x3cm (Figure 2B).

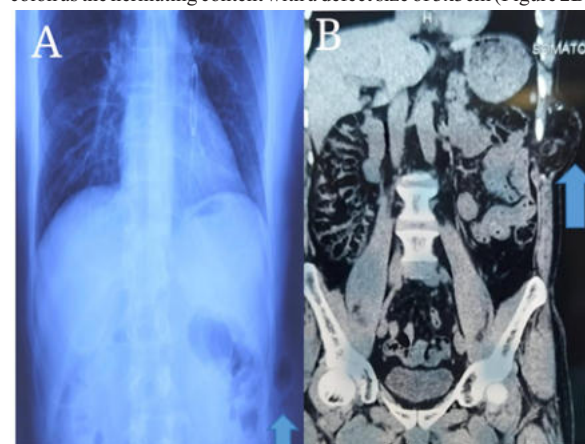


Figure 2 A- Xray showing protrusion of hollow viscus between the ribs. B- NCCT Abdomen showing the same

The patient was planned for elective hernia repair. Preop markings were done (Figure 3A), and the patient was positioned in the right lateral position (Figure 3B).



Figure 3 A- Port markings. B- Patient positioning

Intraoperative, a defect of size 3x3 cm was noted between the 9th and 10th rib with herniation of omentum and descending colon, the diaphragm and reflection of pleura were close to the defect (Figure 4A). The defect was repaired primarily using polypropylene sutures, and composite mesh (20x15cm) was placed over it, which was fixed with tackers (Figure 4B). The postoperative period was uneventful, and the patient was discharged on postoperative day 10 with regular follow-up for 1 year, with no recurrence.

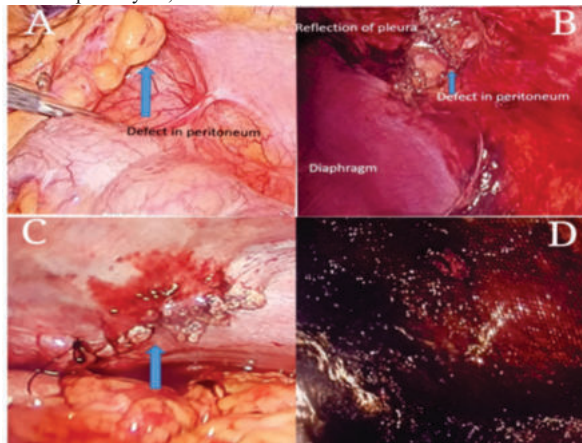


Figure 4 A- Defect in the peritoneum noted with colon as content. B- Contents reduced. C- Repair of the peritoneum using suture. D- Composite mesh placement.

DISCUSSION-

TAWH is caused by direct trauma from an object without sufficient force to penetrate the skin, but with force sufficient to disrupt the underlying muscle and fascia. This is possible because the skin is more elastic than the underlying layers³. Wood *et al.* classified these mechanisms into three types: (1) Small lower quadrant defects such as handlebar injuries; (2) larger abdominal wall defects such as motor accidents, and (3) intra-abdominal herniation such as a deceleration injury⁴. A retrospective study conducted by Netto *et al.* in 34 patients with TAWH yielded three recommendations. First, they concluded that the mechanism of injury should be considered when deciding on operative intervention. Second, clinically apparent hernias often have associated injuries and warrant urgent laparotomy. Finally, occult hernias may be managed expectantly⁵. In our case, it is a penetrating injury from bull bullhorn.

Traumatic abdominal wall hernia caused by a bullhorn is commonly found in the lower abdomen, such as the inguinal region⁶. In our case, the hernia is seen in the upper abdomen. Diagnosis of a hernia may depend on a careful clinical examination of the abdominal wall and the patient's medical history. A computed tomography (CT) scan is the most accurate diagnostic tool. It can define the anatomy of a disrupted abdominal wall, differentiate hernia from hematoma and identify intra-abdominal injuries¹.

Immediate exploration with hernia repair is generally accepted as a favourable choice as it allows us to rule out any intra-abdominal injury and prevents strangulation of herniated bowel that may occur hours to days after injury⁷. The use of mesh has become the gold standard because of a significant reduction in recurrence rates compared to the primary suture repair. However, due to the potential fear of contamination in cases of high-energy TAWH repair, some authors have recommended primary suture repair as a technique because of the high (50%) wound infection rate, even when mesh was not used⁸. But in our case, TAWH was repaired using the IPOM Plus technique.

CONCLUSION-

Bullhorn hernia is a rare condition associated with traumatic abdominal wall hernia. We report a case of bullhorn hernia in a 55-year-old male in the left mid-axillary line in the 9th intercostal space, which was repaired using the IPOM Plus technique, in which the defect was primarily closed using Polypropylene sutures with the placement of composite mesh and fixing it with tackers. Post-op recovery was good if diagnosed within the proper time, as it is associated with a high risk of strangulation and gangrene. CT abdomen is accurate for diagnosis. A delay in diagnosis can be significantly associated with the outcome of the disease.

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