



A series of traumatic abdominal wall hernias

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Abstract : Traumatic abdominal wall hernias (TAWHs) are extremely uncommon type of abdominal wall hernia. In this study, we evaluated three patients who presented to our hospital with blunt injury abdomen with abdominal wall hernias. Three male patients of ages 20, 27 34 admitted with blunt injury abdomen following road traffic accident. First patient had a traumatic hernia in the right inguinal region, the second patient in the right hypochondrial region and third patient in the right lumbar region. The first two patients had associated mesenteric injuries. All three patients underwent emergency surgery with reduction of contents and primary repair. Mesh was placed in the lumbar hernia patient alone. All three patients had an uneventful and complete post operative recovery. TAWH should be suspected in a patient with tender, localized swellings of the abdominal wall following blunt trauma. USG and computed tomography of the abdominal are the helpful investigations to diagnose the hernia and associated intra-abdominal injuries. In all cases of wall defects with bowel herniation, one must take up urgent surgical measures to prevent further bowel injury and to avoid complications

Keyword : Hernia, Trauma, Traumatic Abdominal Wall Hernia
Introduction :

Traumatic abdominal wall hernias (TAWHs) are extremely uncommon type of abdominal wall hernia . Blunt traumatic abdominal hernia is defined as a herniation through disrupted musculature and fascia, without skin penetration with no evidence of a prior hernial defect at the site of injury. In this series we present three patients who presented to our hospital with blunt injury abdomen with abdominal wall hernias.

Case Reports :

Case 1:

21 year old male came with c/o swelling over right lower abdomen, which reduced on lying down following self fall from 2-wheeler - - "Handle bar injury". On receiving patient was conscious, oriented with PR - 98/min, BP - 140/90 mm Hg, with normal systemic examination. Local examination revealed a swelling of size 5 by 3 cm in the right inguinal

region, which was fully reducible with palpable cough impulse. No local tenderness. USG Abdomen revealed 4 by 3 cm defect in the right lower quadrant of anterior abdominal wall. Intraoperatively there was a rent in the muscles of anterior abdominal wall. As there was hemoperitoneum, laparotomy was done which revealed mesenteric tear which was sutured. Anatomical repair of the rent done. Patient had an uneventful post operative recovery with no evidence of recurrence upto 6 months of follow up.



Clinical Examination



Rent in Ant. Abd Wall Musculature exposing bowel

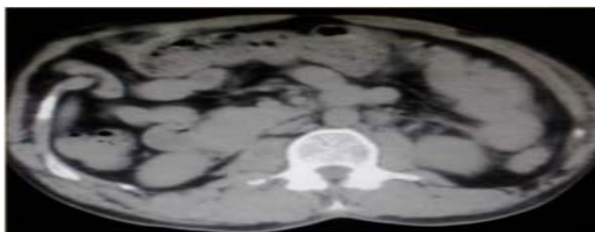
Case 2 :

27 year old male with history of self fall from two wheeler, came with diffuse swelling over right hypochondrium and tenderness. On receiving patient was conscious, oriented with PR - 102 / min and BP - 120/90 mm of Hg with diffuse tenderness all over the abdomen with diffuse swelling over the right hypochondriac with resonant note heard over the swelling. CT Abdomen showed fat

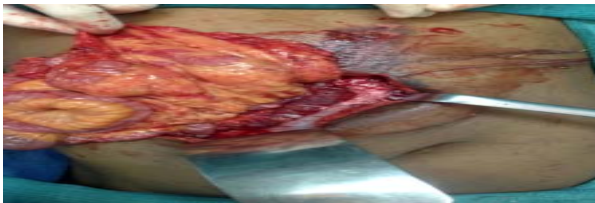
stranding in the subcutaneous plane in the anterolateral abdominal wall associated with herniation of bowel loops, noted in right hypochondriac with minimal free fluid. Intraoperatively there was tear in the anterolateral abdominal wall with bowel in the subcutaneous plane. Laparotomy done through the wound site, revealed a mesenteric tear which was repaired. Anatomical repair of the defect done. Patient had an uneventful recovery.



Clinical Examination



CT Abdomen showing bowel herniation



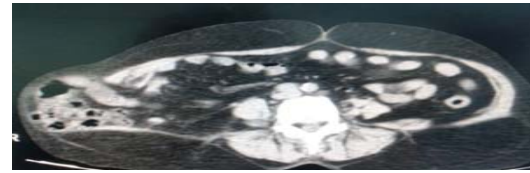
Bowel in the subcutaneous plane

Case 3 :

34 year old male with history of road traffic accident two wheeler vs two wheeler, came with localised swelling over right lumbar region and tenderness over the swelling. On receiving patient was conscious, oriented with PR - 120 / min and BP - 120/90 mm of Hg with 7 by 5 cm swelling in the right lumbar region which was partially reducible with tenderness over the swelling. CT Abdomen showed tear of size 8 by 6 cm in the right lumbar region with bowel in subcutaneous plane. Intraoperatively there was tear in the abdominal wall with protrusion of bowel. Contents reduced, there was no associated injury, hence mesh repair of the defect done. Patient had an uneventful recovery with no evidence of recurrence since one year of follow up.



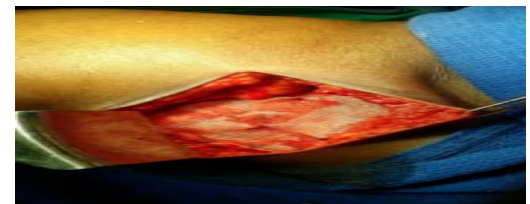
Clinical Examination



CT Abdomen showing bowel herniation



Defect after reducing the bowel



Mesh Repair

Discussion :

Traumatic Abdominal Wall Hernia (TAWH) was first described by Selby in 1906. Handlebar hernia is an even rarer type. It was first described by Dimyan et al. in 1980. TAWH maybe defined as 'herniation through disrupted musculature and fascia, associated with adequate trauma, without skin penetration and no evidence of any prior hernial defect at the site of injury'. TAWHs have been classified into 3 groups based on the bio mechanism of the imparted energy: A blunt direct force, a sudden increase in intra-abdominal pressure force or an acceleration-deceleration 'shear & compressive' force - most common subtype. The accepted mechanism of traumatic abdominal wall hernia is it is caused by a local trauma, for example, with a handlebar which does not penetrate the abdomen because of the elastic properties of the skin. But the increased abdominal pressure due to direct impact results in energy dissipation through the abdominal wall, leading to shearing of fascial and muscle layers. Most cases do not have significant intra abdominal injuries. Most common reported injuries are serosal tears and mesenteric tears. Very few have sustained bowel perforations (Ileal) as in type 2 TAWH. TAWH is commoner in children. Haimovici et al. described the first case of an incarcerated handlebar hernia associated with multiple jejunal perforations and mesenteric tears in a 15-year-old boy. Karaman et al. reported two cases of anti mesenteric ileal perforations with TAWH. Dennis *et al.* described an abdominal wall injury scale based on CT scan findings, with overall injury severity graded on a scale from I to VI. USG and CECT Abdomen are the preferred imaging modalities. Prompt surgery is required to avoid the complications. Incision should be given directly over the traumatic swelling for proper enforcement of the herniated contents and defect. Several studies have been done and need for laparotomy is based on three criteria : Mechanism of injury, clinically apparent, large hernias & occult hernias. Layer by Layer primary suture repair is preferred to mesh repair, especially in patients with high velocity injuries. Mesh repair is desirable in the elderly with

weak anterior abdominal wall so as to prevent the long-term complications of recurrences. Laparoscopic repairs have also been tried, especially in those with delayed presentation.

Conclusion :

- Traumatic abdominal wall hernias (TAWHs) are uncommon, and requires high index of suspicion.
- USG and CECT are the investigations of choice.
- Surgery is the mainstay of management.
- Most TAWH are associated with trivial intra abdominal injuries of which mesenteric tears and serosal tears are commoner.
- Very rarely bowel perforation and gangrene can occur.

References :

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