A case of Handlebar Hernia

Presented By Unit VI
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Case report

A 33 years old male patient came to casualty with alleged history of blunt abdominal injury (RTA) on 16/8/2019 at around 7.30pm near D.Y Patil engineering college, Pimpri, Pune.

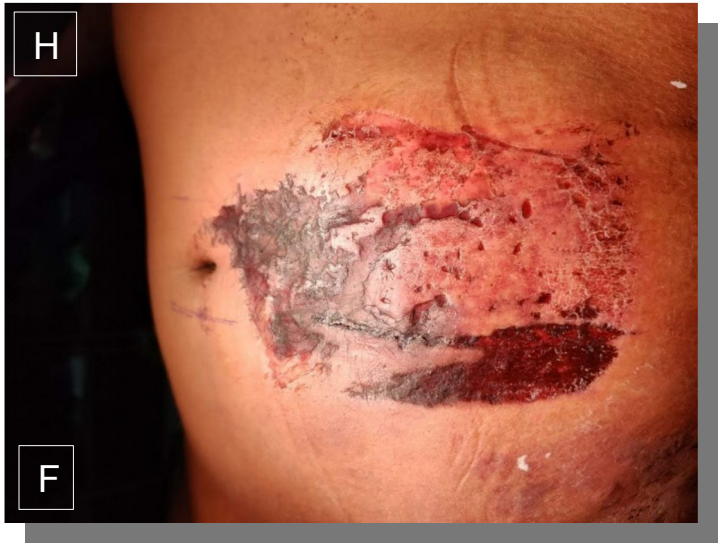
Mode of injury :Handle bar injury during Collision with another two wheeler, while riding on one.
C/o left sided abdominal pain and fullness, unable to walk and bear weight on left lower limb.
C/o multiple wounds sustained all over his body.
H/o transient loss of consciousness present approx. 5mins.

- No h/o ENT bleed, seizures, haematuria or bleeding per rectum,
- No h/o vomiting.
- No h/o co- morbidities or previous surgeries.
- Patient was initially admitted at an outside hospital and then was brought here 1 day later for further management.
- Patient had been brought with Ryles tube and Foley catheter in situ.

On general examination the patient was conscious, oriented and vitally stable.

- GC : Fair, Pulse :100bpm, Bp :130/90mmhg and was afebrile.
- P/A : Diffuse fullness present over left lumbar and left iliac fossa, tenderness and guarding were present at the same site of abdomen. An ~15x10cms horizontally elliptical abrasion seen over left lumbar region over the area of fullness, extending from left of the umbilicus laterally on the left side. Rest of the abdomen was soft and non-tender.

  Bowel sounds-Sluggish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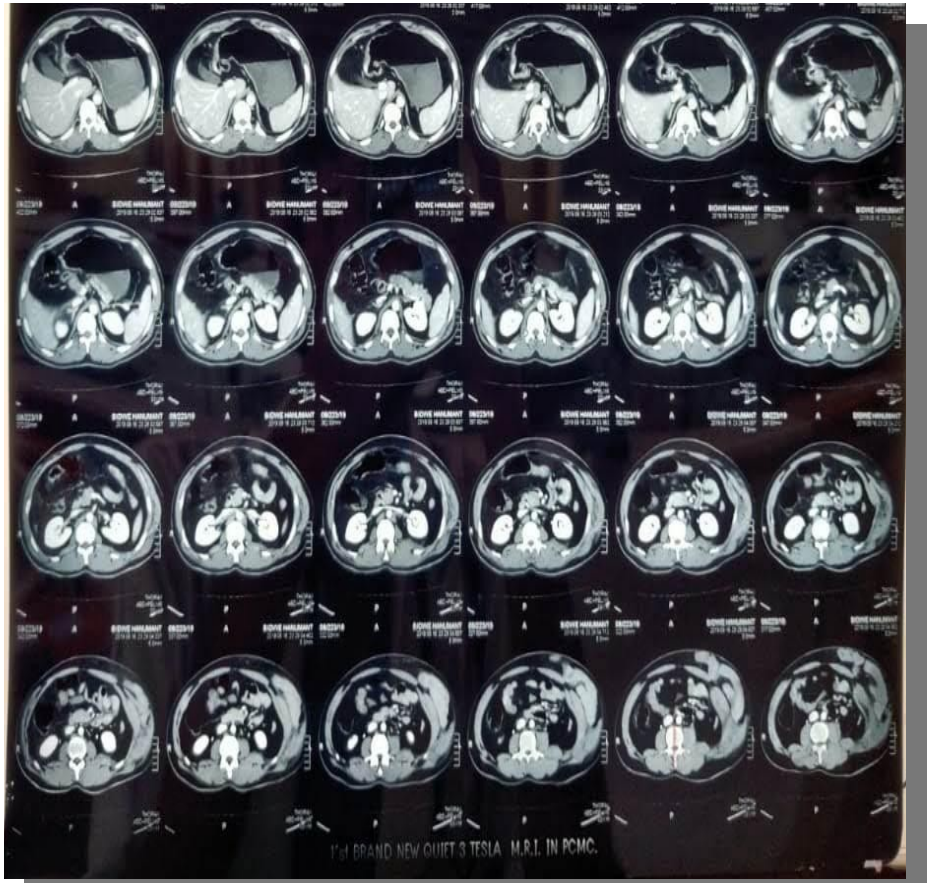
- P/R: Sphincter tone was normal, finger stained with yellow coloured formed soft stools.
- External genitalia : WNL
- B/L lower limb :Multiple grazed abrasions seen on,
  Knee of right limb
  Knee and dorsum of foot of left lower limb
- Abrasions were present over b/l upper limb as well
- Pelvic compression test- Tenderness present on the left hip
- Chest compression test- Left side chest wall tenderness present

INVESTIGATIONS

- All routine blood investigations were within normal limits.
- X- ray PBH showed mildly displaced non-communited frature of left iliac blade.
- x-rays of B/L Upper Limb and Lower limb, Chest, Abdomen were within normal limits.
- CECT ABDOMEN AND PELVIS was suggestive of large left sided anterior abdominal wall defect in the anterior abdominal wall muscles measuring 6 cm in width and fracture of ala of left ilium.

- CT BRAIN showed no abnormalities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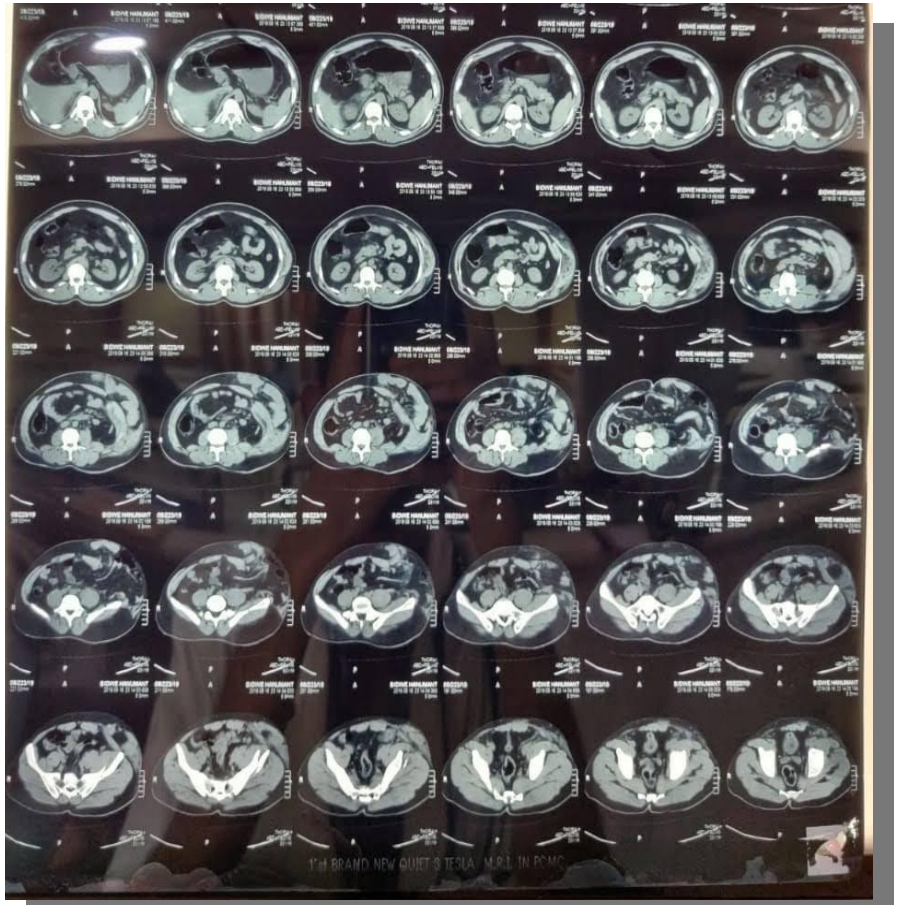
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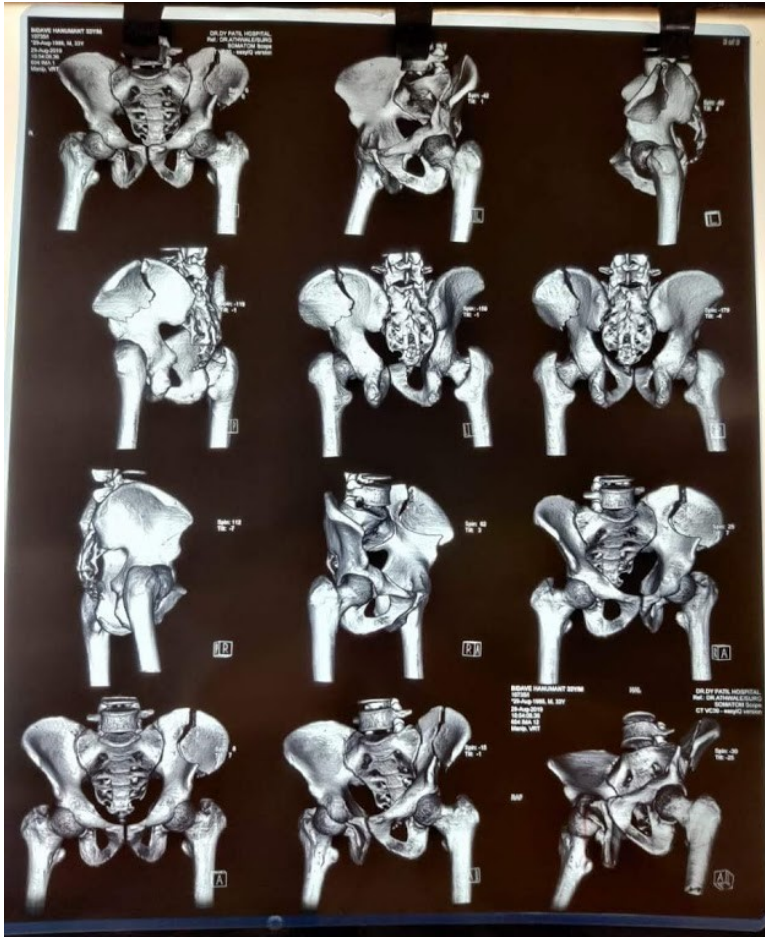


Management

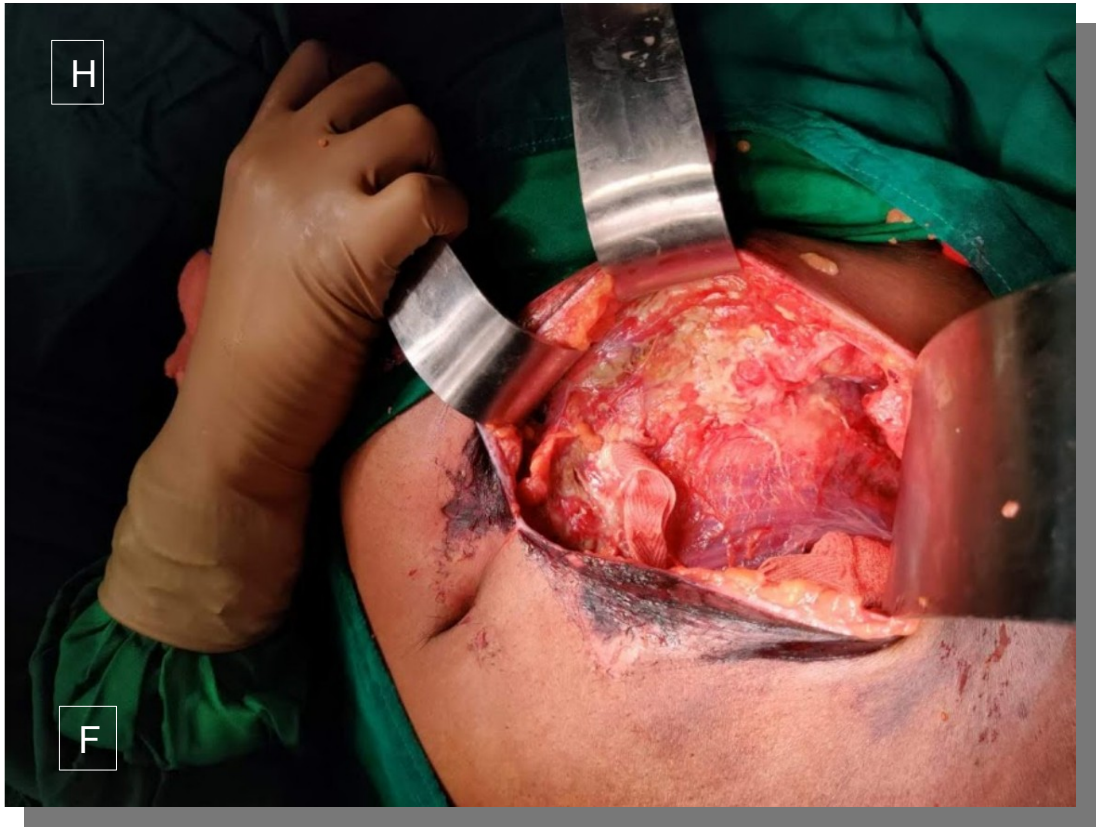
A final diagnosis of Traumatic Anterior Abdominal Wall Hernia (Grade V injury) with fracture of ala of left hilum was made.

Patient was taken up for emergency exploratory laparotomy.
Intraoperatively, Incision was taken directly over the defect instead of midline, there was evidence of large ventral hernia with small bowel and descending colon as content through the anterior abdominal wall muscles with defect measuring 10x5cm. There was evidence of extensive devitalised tissue of abdominal wall muscles and subcutaneous fat.

The bowel loops were of normal calibre and color with normal peristalsis

●The bowel was repositioned into the peritoneum .

●The devitalised tissue was debrided, and thorough wash was given using Normal Saline and Metronidazole.
●Abdominal drain was placed following which peritoneum was closed with vicryl
● The devitalised part of the muscle was excised and the muscles were approximated.
●Intraoperative decision of not placing a mesh was made due to extensive devitalised tissue and to prevent infectious complications. A negative suction drain was kept under subcutaneous tissue and edges of skin approximated.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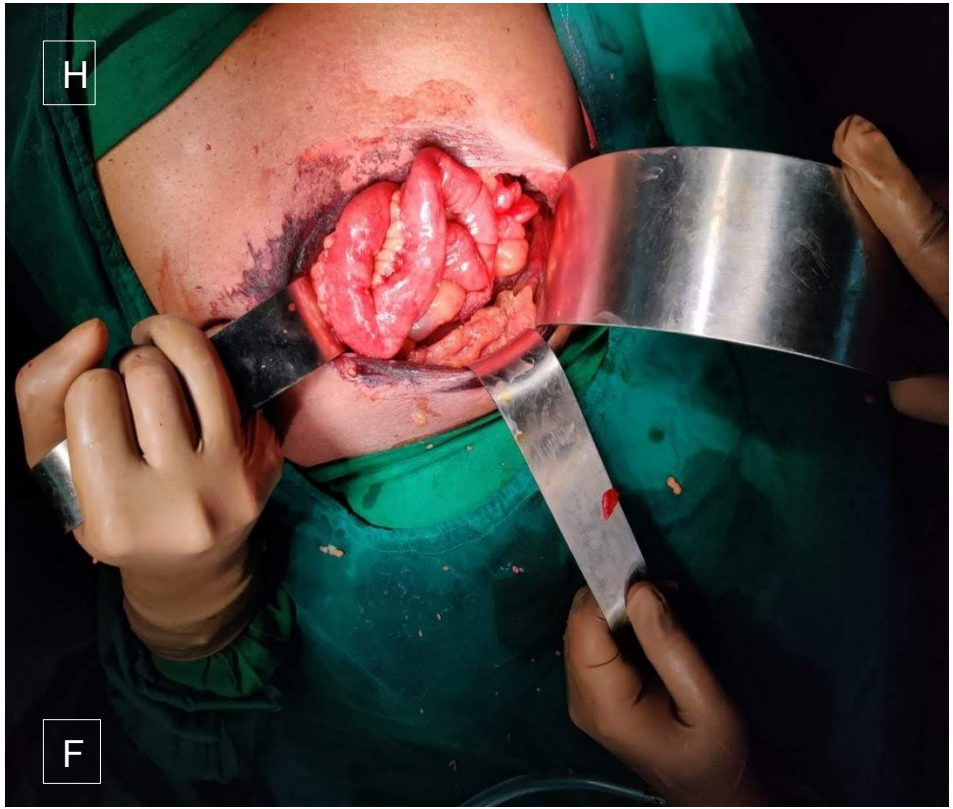
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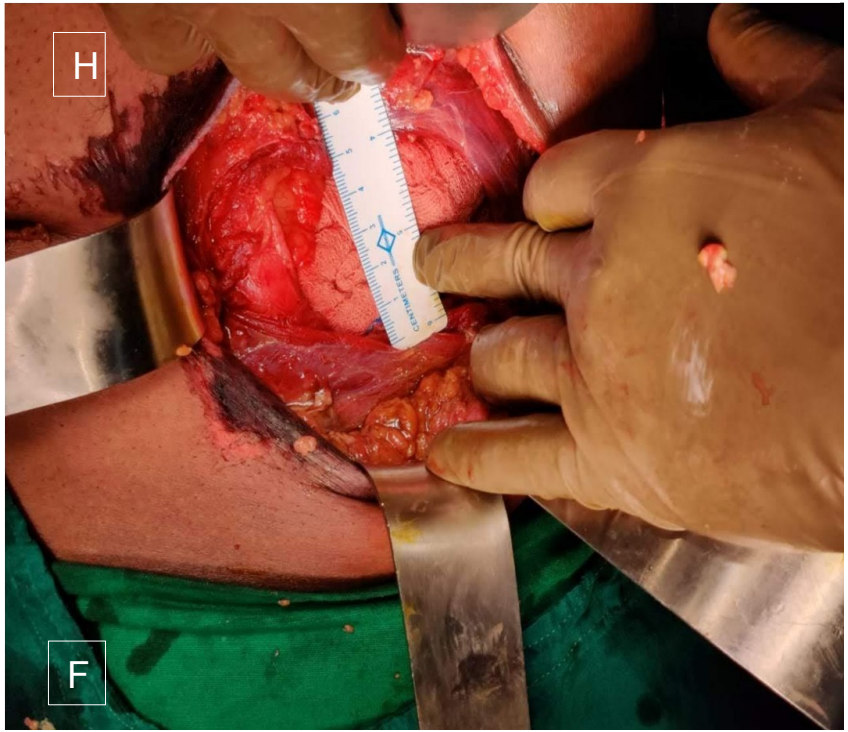
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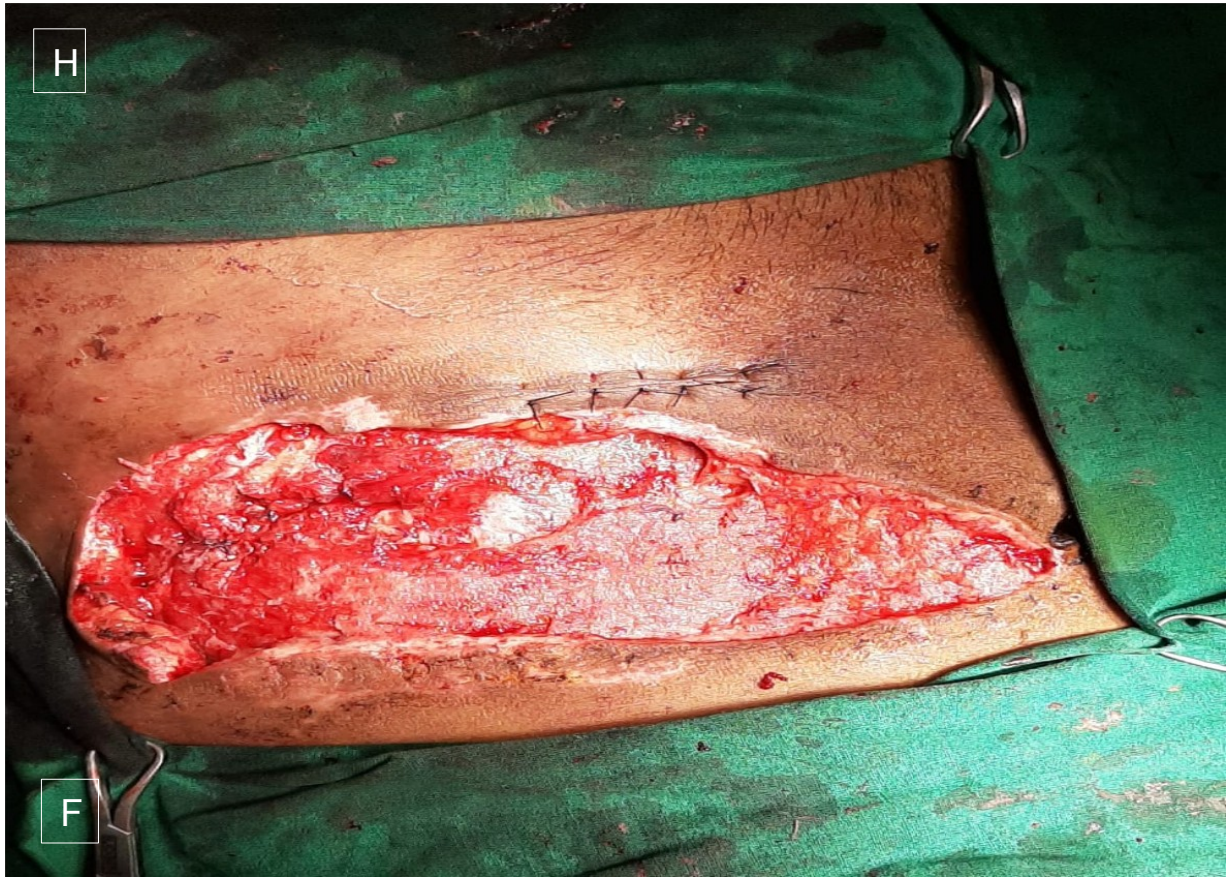
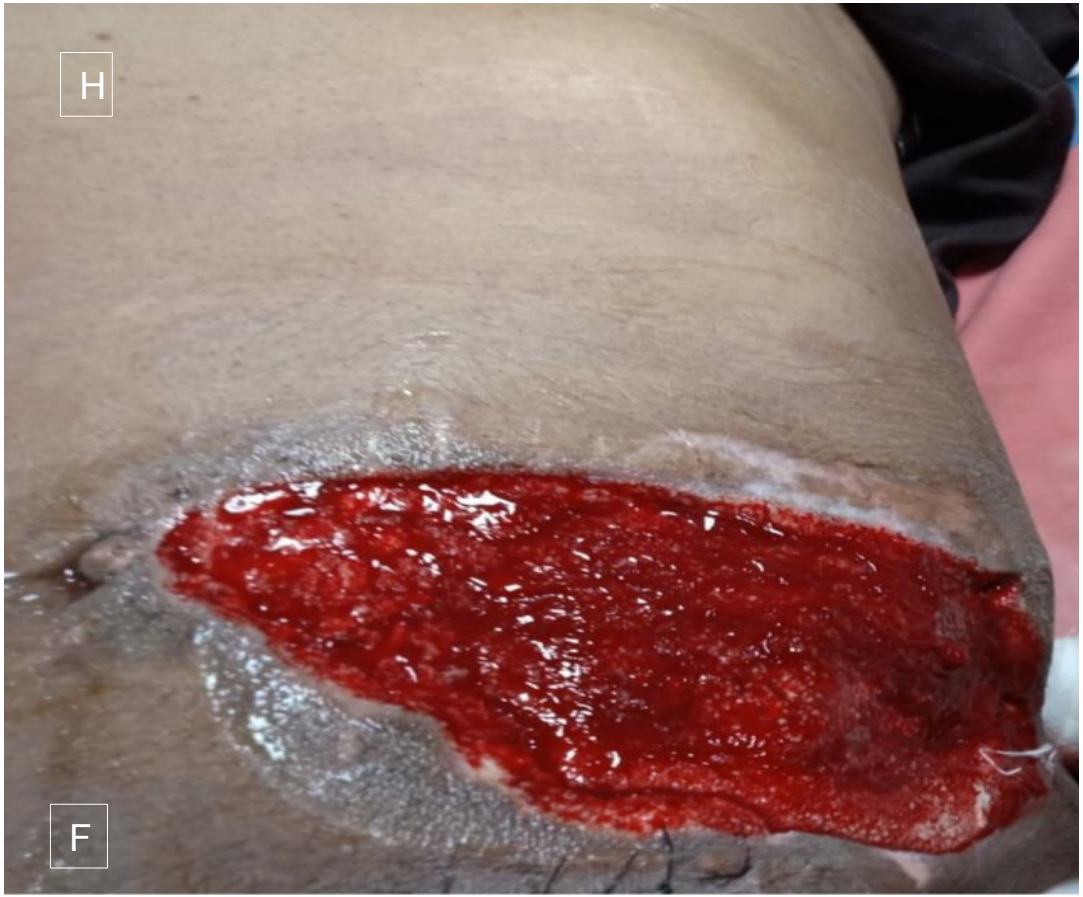
- Postoperatively patient was kept in the SICU for first 2 days and then shifted to ward.
- Abdominal drain was removed on POD7
- Patient had developed a muscle deep gape on POD8 for which serial dressings were done, followed by vaccum dressing, following which patient was taken up for split thickness skin grafting.

For the Left iliac blade fracture patient was given skin traction of 4kgs with immobilization for about 12 days with necessary DVT precautions as advised by the orthopaedician.

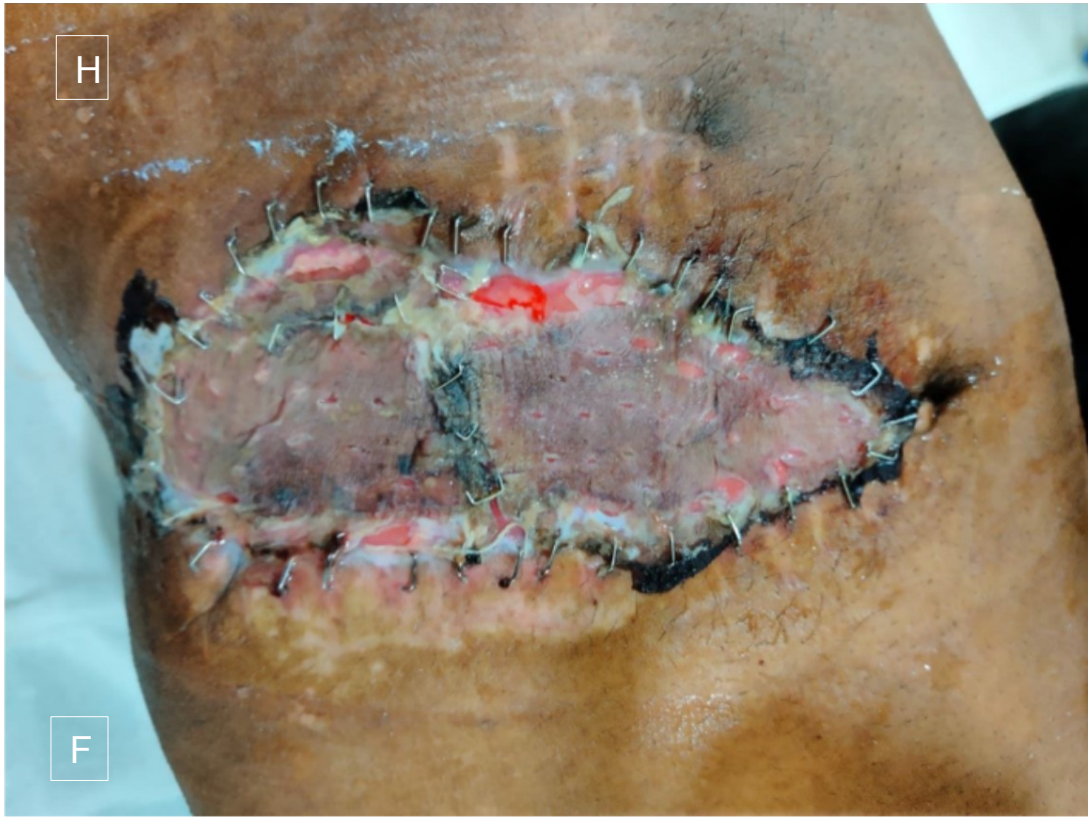
POD17



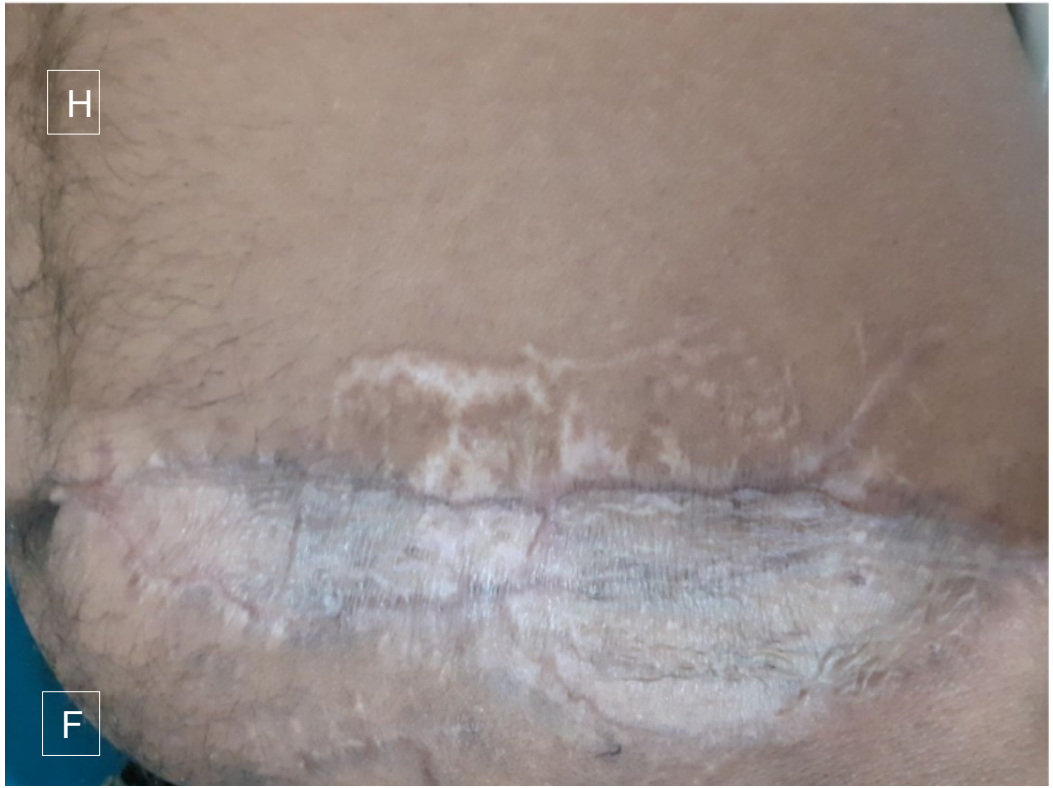
POST VACCUM DRESSING



POST SKIN GRAFTING



5 MONTHS POST OPERATION



DISCUSSION

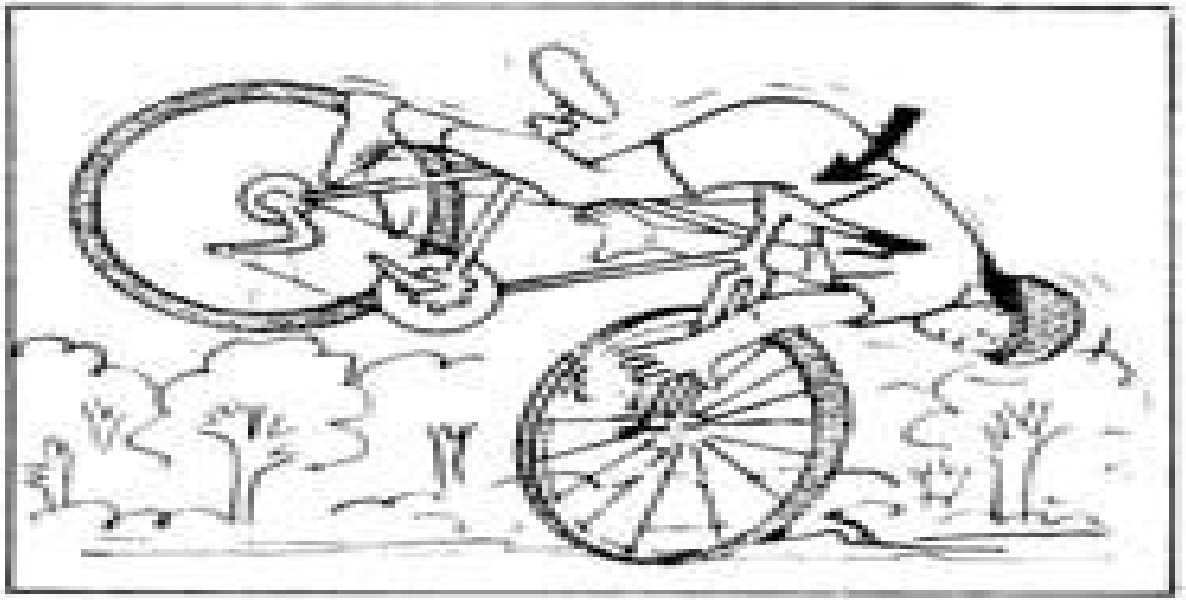
- Traumatic abdominal wall hernia (TAWH) is an extremely uncommon type of hernia, resulting from blunt trauma to the abdomen

- Traumatic abdominal wall hernia (TAWH) is defined as immediate appearance of the hernia through disrupted musculature and fascia following adequate trauma, with no evidence of skin penetration or pre-existing hernia.

- The first case was reported in 1906 by Shelby and since then there has been a paucity of clinical reports.

DISCUSSION

- A type of TAWH called “Handle bar hernia” was described in 1980 by Dimyan et al.
- Incidence of TAWH is about 0.9% of patients sustaining blunt abdominal trauma.
- Most commonly occurs following motor vehicle collisions (MVCs), including Handle bar injury (35%), seatbelt injury (19%) and crush injury (25%).
- A total of only fifty-five cases of adult traumatic abdominal wall hernia were found in the English literature out which only 3-5 cases



- It can occur either with low or high energy blunt abdominal injuries.

- Mechanism of injury : On sudden application of a large force to the abdomen over an area large enough to prevent penetration of the skin results in pressure induced disruption of the abdominal wall of muscles and fascia, allowing subcutaneous herniation of abdominal viscera through the defect. [3]

- The tangential shearing stresses associated with a sudden elevation in intra-abdominal pressure are thought to be the basic injury mechanism.[3]

- Several suggested definitions and diagnostic criteria have been proposed by different authors to characterize TAWH.
- These differing criteria were either complex or non-conclusive.
- To this end, and with the widespread use of computed tomography (CT) in the initial assessment of trauma patients, a simpler, CT-based grading system has been developed.

- Dennis et al. described a new grading system by using CT.

Abdominal wall (AW) injury grade	Definition
I	Subcutaneous tissue contusion
II	AW muscle haematoma
III	Single AW muscle disruption
IV	Complete AW muscle disruption
V	Complete AW muscle disruption with herniation of abdominal contents
VI	Complete AW disruption with evisceration

- The incidence of Grade V Hernia among the rest is 0.07%.
- Timely diagnosis and treatment are imperative, as a delayed diagnosis can lead to complications, with high morbidity and may prove fatal

- As for the treatment, it could be emergent or elective.
- It is primarily based on the patient’s stability upon presentation.
- Factors affecting the timing (early or delayed) and the type (primary or prosthetic, open or laparoscopic) of the repair include thefollowing:
  1. The size of the abdominal wall defect,
  2.The timing of its diagnosis,
  3.The presence of associated intra- and extra-abdominal lesions,
  4. The surgeon’s expertise in laparoscopic surgery

REFRENCES

- 1. Selby CD. Direct abdominal hernia of traumatic origin. J Am Med Assoc 1906;47(1):1485–1486
- 2. Henrotay J, Honore C, Meurisse M. Traumatic abdominal wall hernia: a case report and review of the literature. Acta Chir Belg 2010;110(4):471–474
- 3.Suhardja TS, Atalla MA, Rozen WM. Complete abdominal wall disruption with herniation following blunt injury: case report and review of the literature. Int Surg. 2015;100(3):531–9.
- 4.O.S. Al Beteddini et al. / International Journal of Surgery Case Reports 24 (2016) 57–59

UNIQUENESS OF THE PRESENT CASE

- The incidence of TAWH is among the blunt abdominal trauma is 1%.
- The incidence of Grade V Abdominal wall injury among TAWH is rarer accounting to 0.07%.
- Only fifty five cases of adult traumatic abdominal wall hernias were reported in the English Literature.
- Of which only 3-5 cases were reported from India

THANK YOU