# Hernia After Blunt Trauma Abdomen- A Case Report

Riyad M[1]

## Abstract

Traumatic abdominal wall hernia is a rare condition that can follow any blunt trauma. Associated intra-abdominal injuries are infrequent. In this case report, a middle aged man diagnosed as abdominal wall hernia following fall from height, surprisingly without any other injury. Aim of this report is to augment the knowledge of traumatic abdominal wall hernia, its diagnosis and proper treatment.

CBMJ 2015 July: Vol. 04 No. 02 P: 58-61

***Keywords:*** Abdominal wall, blunt trauma, traumatic hernia .

## Introduction

Traumatic disruption of the abdominal wall causing hernia is extremely uncommon type of abdominal wall hernia as far as the etiology is concerned. The diagnosis is rarely straight forward, and management can vary substantially due to differences in presentation. As a rare entity it has a confusing clinical picture and requires a high index of suspicion for prompt diagnosis and management. Contrast-enhanced computed tomogram and Ultrasonography is useful to diagnose traumatic intra-abdominal hernia & evaluate the associated intra-abdominal injuries. Early surgical repair is advocated as definitive treatment.

## Case Report

A 42-year-old day labor presented with a swelling on his right lumber area. He gave history of fall from a coconut tree 2 hours back, whilst trying to climb down from about 20 feet height. He had landed on his right side. Since then he developed a sustained swelling on right half of abdomen. He had no loss of consciousness and didn't have any trauma to elsewhere of body. He was having mild pain on right side of abdomen other than that there was no nausea, vomiting, hematemesis, dizziness or vertigo. He was not diabetic, nor hypertensive.

On examination, patient came himself on his own foot walking normally, conscious, oriented. He was not anemic, nor dehydrated, pulse 80 beat/min, blood pressure 120/85mm of Hg, respiratory rate 12breath/min. There was a 7X8cm bulging on right side of his abdomen which was diminishing on lying down and coming back on coughing. Skin overlying the swelling was having mild bruise. Right lumber region was tender and a 6cm gap in muscle layer was felt. (Figure-1). Otherwise, abdomen was soft, lax, non tender, no guarding or rigidity was appreciated.

1. * Dr. Mahamud Riyad
Associate Professor
Addin Medical College Hospital,
Dhaka.

***Address of correspondence***
Email : pfoysol_doctor@yahoo.com
Mobile : 01733506040

Figure-1

On investigation, his Hb was 15.6gm/dl, WBC 7500/ml, S. creatinine and RBS was normal. X ray abdomen and chest revealed no abnormality. CT scan abdomen showed a gap in muscle layer of right lateral and anterior abdominal wall and herniation of bowel loop and omentum into subcutaneous space through that gap (Figure-2). There was no free fluid or free air in abdomen suggesting bowel injury or internal hemorrhage. Liver, spleen and kidneys were intact.

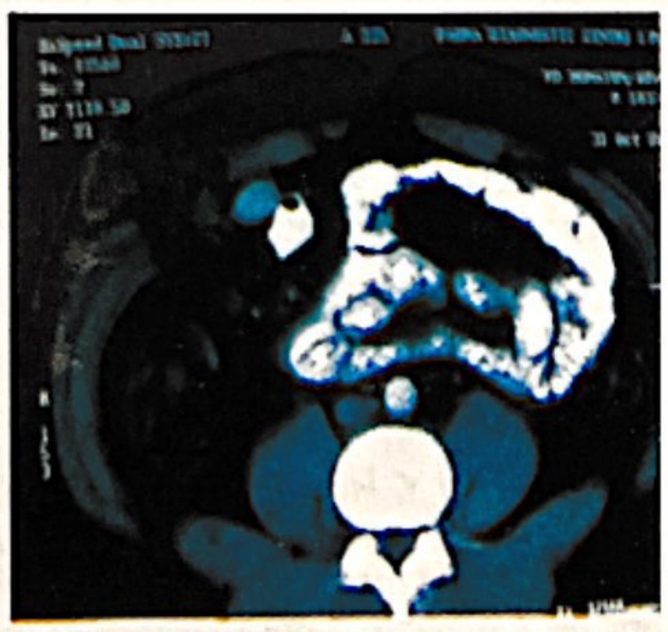

Figure-2

Laparotomy was performed on very next day, through a transverse incision over the defect extending from right flank up to midline between umbilicus and xiphisternum. After dividing the subcutaneous tissue a 10 cm gap was identified which splitted external oblique, internal oblique and transverses abdominis muscle laterally and anterior and posterior rectus sheath medially up to linea alba, but rectus abdominins muscle was intact (Figure-3).

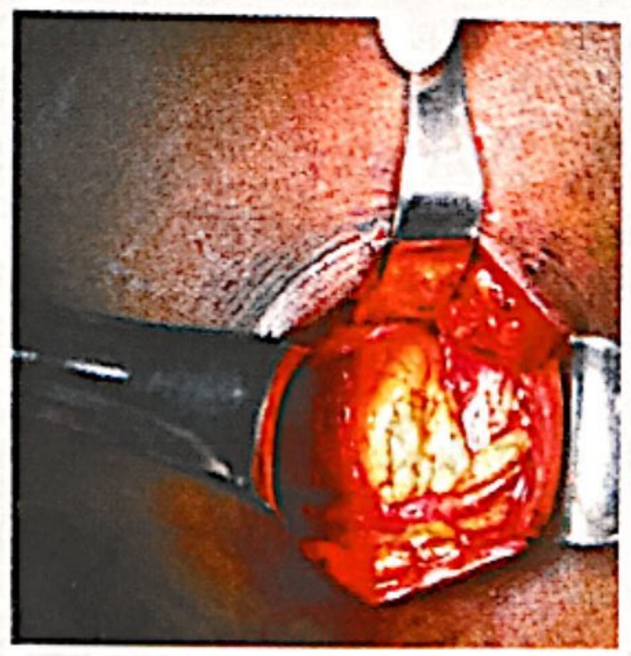

Figure-3

Descending colon, small bowel loops and greater omentum were trapped within the defect, but these could be easily reduced. Following reduction, the peritoneal defect was repaired with 2/0 Vicryl and the muscle defect was repaired in layers primarily using 1/0 Vicryl continuous suture. On 6th month of follow-up patient was doing fine with no abdominal wall defect.

**Discussion**

Traumatic abdominal wall hernia should be considered in any patient who presents with abdominal wall swelling to the emergency room after sustaining blunt trauma to the abdomen. The criteria for traumatic abdominal wall hernia include immediate appearance of the swelling through the disrupted muscle and fascia after blunt abdominal trauma, and failure of the injury to penetrate the skin[1]. The following clinical signs can help establish the diagnosis. On inspection, there may be an imprint present on the abdomen through which the force was channeled. This imprint is usually accompanied by ecchymosis. Around the imprint, a tender mass may be palpated, reminiscent of a normal hernia. Apart from these findings, the abdominal examination is usually normal. In severe cases where the impact has also caused damage to the intestines, there can be signs of peritonitis. All of the above-mentioned symptoms may, however, also be absent, as there are case reports of patients in which symptoms presented 48hour after the accident[2]. The pathophysiology of traumatic abdominal wall hernia involves the application of a blunt force

to the abdomen over an area large enough to prevent penetration of the skin; the perpendicular forces resulting in a pressure-induced disruption of the abdominal wall muscles and fascia, allowing subcutaneous herniation of abdominal viscera through the defect, as proposed[3]. As the skin is more elastic than the other layers of the abdominal wall, it remains intact even though the underlying musculature and fascia are disrupted which gives rise to traumatic abdominal wall TAWH). Associated intra-abdominal injuries are infrequent[1]. The differential diagnosis for traumatic abdominal wall hernia includes other causes for bulges in the inguinal or lower abdomen region. After trauma, a haematoma of the rectus sheath may mimic traumatic abdominal wall hernia.

Computed tomography (CT) scan and USG of the abdomen are the investigations of choice[7,8]. However, it can miss hollow viscous injury or mesenteric tear.

TAWHs are uncommon, and it remains controversial whether repair should be urgent or elective. If there are signs of intra-abdominal damage on presentation, generalised peritonitis or evidence of perforation on CT, primary surgical intervention should be carried out promptly.

Smaller defects, in which intra-abdominal injury is absent, may also be corrected on a delayed basis. However, due to the risk of strangulation and incarceration, early surgical intervention is favoured[9,10].

The treatment of traumatic abdominal wall hernia consists of surgical exploration with closure of the defect. The incision should be given directly over the traumatic swelling for proper enforcement of the herniated contents and defect[11,12]. Another controversy is anatomical repair or mesh repair, which one should be preferred. The repair of small defects with clear borders is straightforward. In contrast, more prominent disruptions require a variety of factors to be considered, such as the patient's overall condition, associated intra-abdominal injuries, the defect's size and site, and available surgical expertise[13-15]. Primary approximation of the traumatic defect can be done by nonabsorbable sutures with or without mesh, as most case reports indicate[16]. With larger defects, seen after high-energy impacts, prosthetic materials are often used to achieve closure. Mesh repair is contraindicated in the contaminated wall defects, because of the high risk of mesh infection.

## Conclusion

Hernia resulting from blunt abdominal trauma should be suspected in a patient with tender, localized swellings of the abdominal wall. An abdominal CT scan can detect the hernia and any associated intra-abdominal injury. Early surgery and primary closure is usually enough even for a large defect but mesh repair is an alternative.

## *References*


1. *Damschen DD, Landercasper J, Cogbill TH, Stolee RT. Acute traumatic abdominal hernia: Case reports. J Trauma. 1994;36:273–6.*
2. *Losanoff JE, Richman BW, Jones JW. Handlebar hernia: ultrasonography-aided diagnosis. Hernia. 2002;6:36–38. doi: 10.1007/s10029-002-0041-9.*
3. *Chen HY, Sheu MH, Tseng LM: Bicycle-handlebar hernia: a rare traumatic abdominal wall hernia. J Chin Med Assoc 2005, 68:283-285.*
4. *Mancel B, Aslam A: Traumatic abdominal wall hernia: an unusual bicycle handlebar injury. Pediatr Surg Int 2003, 19:746-747.*
5. *Iinuma Y, Yamazaki Y, Hirose Y, Kinoshita H, Kumagai K, Tanaka T, Miyajima M, Nitta K, Naitoh S, Kobayashi K: A case of a traumatic abdominal wall hernia that could not be identified until exploratory laparoscopy was performed. Pediatr Surg Int 2005, 21:54-57.*
6. *Lane CT, Cohen AJ, Cinat ME: Management of traumatic abdominal wall hernia. Am Surg 2003, 69:73-76*
7. *Yarbrough DR. Intra-abdominal injury with handlebar hernia: Case report and literature review. J Trauma. 1996;40:116–8.*
8. *Killen KL, Girard S, DeMeo JH, Shanmuganathan K, Mirvis SE. Using CT to diagnose traumatic lumbar hernia. AJR Am J Roentgenol. 2000;174:1413–5.*
9. *Belgers HJ, Hulsewé KW, Heeren PA, Hoofwijk AG. Traumatic abdominal wall hernia: delayed presentation in two cases and a review of the literature. Hernia. 2005;9:388–391. doi: 10. 1007/s10029-005-0338-6.*

10. Litton K, Izzidien AY, Hussien O, Vali A. Conservative management of a traumatic abdominal wall hernia after a bicycle handlebar injury (case report and literature review) J Pediatr Surg. 2008;43:e31–e32. doi: 10.1016 /j.jpedsurg. 2007.12.059.
11. Hassan KA, Elsharawy MA, Moghazy K, AlQurain A. Handlebar hernia: A rare type of abdominal wall hernia. Saudi J Gastroenterol. 2008;14:33–5.
12. Drago SP, Nuzzo M, Grassi GB. Traumatic ventral hernia: Report of a Case, with Special reference to surgical treatment. Surg Today. 1999;29:1111–4.
13. Aucar JA, Biggers B, Silliman WR, Losanoff JE. Traumatic abdominal wall hernia: Same-admission laparoscopic repair. Surg Laparosc Endosc Percutan Tech. 2004;14:98–100.
14. Rao PS, Kapur BM. Traumatic intermuscular hernia in the anterior abdominal wall. Arch Emerg Med. 1987;4:237–9.
15. Fraser N, Milligan S, Arthur RJ, Crabbe DC. Handlebar hernia masquerading as inguinal haematoma. Hernia. 2002;6:39–41.
16. Ganchi PA, Orgill DP. Auto penetrating hernia: A novel form of traumatic abdominal wall hernia: case report and review of the literature. J Trauma. 1996;41:1064–6.