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Jejunal transection following trivial trauma: Case report and review of literature

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ABSTRACT

INTRODUCTION: Severe hollow organ injury following trivial blunt abdominal trauma is uncommon. If it occurs it can easily be missed during routine clinical evaluation. Though less than ten cases of jejunal transection following trivial trauma have been reported in literature, this is the first case of jejunal transection occurring in a patient who fell while walking.
CASE PRESENTATION: We report a 32 year old female Ugandan, who walked into the emergency room due to abdominal pain following a fall while walking. She was found to be hemodynamically stable and was initially hesitant to do further investigations but finally accepted to go for abdominal ultrasound scan and a chest x-ray. Abdominal ultrasound scan noted free peritoneal fluid and erect chest radiograph revealed a pneumoperitoneum. She was admitted for an exploratory laparotomy. At laparotomy we found a complete jejunal transection with mesenteric laceration. Primary anastomosis was done; the patient had an uneventful recovery and was discharged on the tenth postoperative day.
DISCUSSION: Any trauma to the abdomen can potentially cause devastating injury to hollow viscera and should therefore be evaluated thoroughly.
CONCLUSION: This case demonstrates that even in a resource limited setting, basic investigations like an abdominal ultrasound scan and erect chest radiographs are important when managing a patient with blunt abdominal trauma even though the injury seems trivial.

1. Introduction

Severe forms of bowel injury are rare and if reported usually follow high energy impact as seen in sports related injury [1,2], motor vehicle accident [3–6] and falls from heights. Bowel transection has been reported following supposedly trivial trauma like coughing [7] fall from a bicycle [8], child abuse [9,10], hitting an iron fence bar [11], handle bar trauma and others [12]. Bowel perforation also occurred following a kick by an ostrich [13].

Diagnosis of injury to gut especially in resource limited areas is often difficult. Most patients who present with blunt abdominal trauma are hemodynamically stable and often a clinician may see no reason to investigate further. Currently the investigation of choice in a hemodynamically stable patient with history of blunt abdominal trauma is a computed tomography scan [14], however, it is expensive and thus not easily accessible in resource limited areas. A thorough clinical evaluation and a high index of suspicion are key in avoiding cases of missed injuries.

This patient was clinically stable at presentation and was only operated because of the radiological evidence of gut perforation (Fig. 1).

2. Case presentation

A 32 year old female Ugandan, presented to our emergency room complaining of vague abdominal pain after she tripped and fell on her abdomen while taking a walk. The abdomen was of normal fullness and slightly tender. Blood pressure 102/79 mmHg, pulse 113 beats per minute, temperature 37.1 °C, respiratory rate 20 breaths per minute. Complete blood cell count was normal but Hb was 11.3 g/dl. Erect chest radiograph revealed a pneumoperitoneum and free peritoneal fluid was demonstrated during abdominal ultrasonography (Fig. 2).

We did an emergency laparotomy and found 1.2 l of blood, complete jejunal transection 5 cm from the ligament of Treitz and a mesenteric laceration of about 6 cm at the site of transection (Fig. 3). We did primary jejuno-jejunal anastomosis and lavaged with normal saline. The Patient improved and was discharged on the tenth post-operative day.

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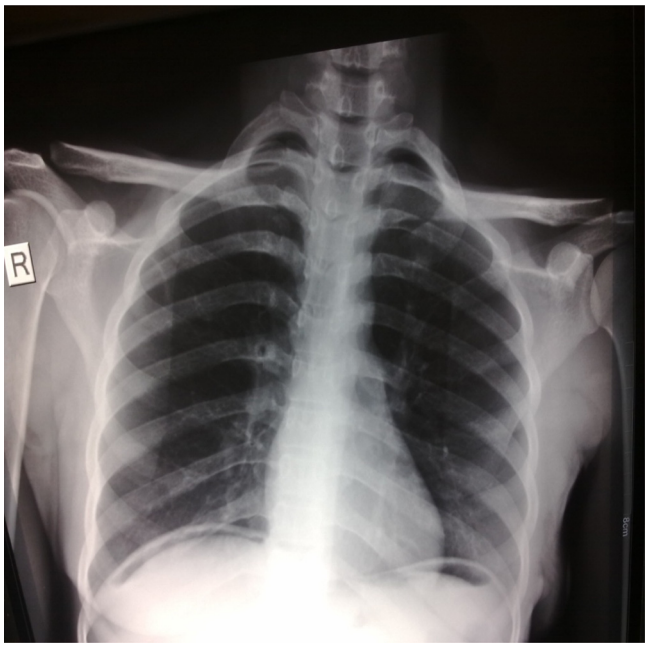

Fig. 1. Chest radiograph showing pneumoperitoneum.

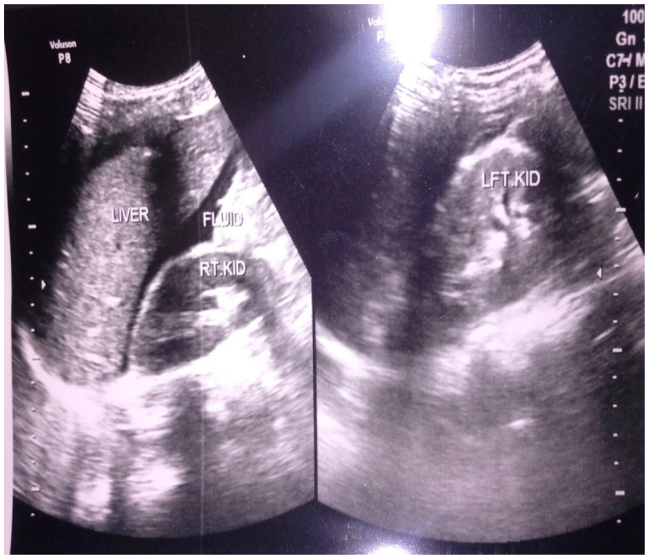

Fig. 2. Abdominal ultrasound scan showing free peritoneal fluid.

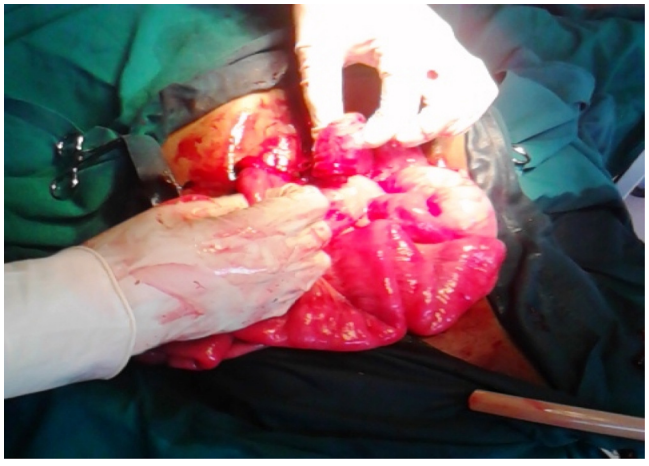

Fig. 3. Completely transected ends of jejunum held on each hand.

3. Diagnosis

Gut perforation following blunt abdominal injury

4. Treatment

Laparotomy, lavage and a primary end to end jejuno-jejunostomy was done.

5. Outcome and follow up

Post-operative recovery was uneventful and she was discharged after full recovery on the 10th post-operative day. Follow-up at two weeks and three month were all unremarkable.

6. Discussion

Small bowel transection though uncommon, is associated with high energy impact [1–7] however, transection following seemingly trivial causes like cough [7] bicycle fall [8] battered child [9,10] have been reported. The mechanism of injury ranges from mesenteric laceration due to compression, bowel rupture due to deceleration injury. This affects fixed segments such as the duodenum, duodeno-jejunal flexure, proximal jejunum and terminal ileum. This supports the finding in this case where the transection occurred 5 cm from the ligament of Treitz.

It's also possible for bowel transection to occur by an explosive mechanism in cases where intraluminal pressure greatly exceeds the intestinal wall tension [15].

Blunt abdominal trauma patients with bowel injury may present without overt symptoms. In our case the patient was stable and the only complaint was abdominal pain.

Abdominal computed tomography (CT) scan plays a key role in detection of bowel injuries following blunt abdominal trauma, however, if done early, a small bowel perforation may be missed. Diagnostic laparoscopy provides the best possible alternative since it's both diagnostic and therapeutic [16].

In resource limited settings, diagnosis of bowel injuries especially in the setting of trivial trauma presents a challenge, due to limited access to abdominal CT scans and laparoscopy services which if available are considered expensive. Abdominal ultrasonography which is readily available is user dependant and pneumoperitoneum on an erect chest radiograph has a low sensitivity and specificity [13,15,17,18]. Therefore even in absence of a pneumoperitoneum at radiography, the clinician needs to have a high index of suspicion in a patient who continues to complain of abdominal pain following blunt abdominal trauma. This work has been reported in line with the CARE criteria [19].

7. Conclusion

Blunt trauma to the abdomen, even though apparently trivial, should be thoroughly evaluated. The use of basic investigations like abdominal ultrasonography and x-rays in emergency room should be encouraged even in resource limited settings. Emergency room physicians should have a high index of suspicion while managing patients with blunt abdominal trauma. The importance of this case is to create awareness among physicians about this group of patients with seemingly trivial injuries that if not thoroughly evaluated, will lead to missed injuries and thus worse outcomes.

Consent

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images. A

copy of the written consent is available for review by the Editor of this journal.

Competing interests

The author(s) declare that they have no competing interests.

Sources of funding

There was no external source of funding for this study. Any costs incurred was covered by the corresponding author.

Ethical Approval

Signed informed consent was obtained from the patient and ethical approval granted by Lubaga hospital research and ethics committee.

Author contribution

Dr. Michael Okello: conception of the idea, clinically managed the patient, wrote the manuscript Dr. Charles Batte: clinically managed the patient, did patient follow up Dr. William Buwembo: reviewed the manuscript for important intellectual content

Guarantor

Dr. Michael Okello.

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