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Blunt Abdominal Trauma Causing Transection of the Appendix: A Case Report

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Abstract Blunt trauma following Motor Vehicle Collision (MVC) is the most common traumatic presentation to the Emergency department. Injuries mainly manifest as solid organ injuries or hollow viscous injuries. Nevertheless, appendicular injury is not common following blunt abdominal injury. We are reporting a case of 53 years old male who was found out to have a transection of the appendix after a traumatic blunt abdominal injury.

Keywords: *appendix, transection, blunt, trauma, MVC*

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1. Introduction

Acute appendicitis is a clinical diagnosis of abdominal pain that normally occurs in any age group individuals. Post traumatic acute appendicitis is a rare entity. Furthermore, traumatic transection of the appendix causing the same pain is even a much less common finding [1].

2. Case Report

A 53 years healthy male, presented to the Emergency department after a high speed motor vehicle frontal impact collision. He was an unrestrained driver, didn't loose consciousness, and was only complaining of abdominal pain and abdominal distension. He had no previous medical or surgical history. Primary survey showed initial hypotension with a systolic blood pressure of 65 without significant tachycardia. The abdomen was distended and tender all over without skin discoloration. The pelvis was stable.Focused Assessment Sonography for trauma (FAST) showed the presence of fluid in the Morrison pouch and was given an injury severity score of 4. Fluid resuscitation and tranexamic acid were given. He responded to one liter of warm crystalloid bolus infusion allowing the performance of trauma computed tomography (CT) scan. Moderate to large amount of hemoperitonium was mainly seen in the right lower quadrant and pelvic areas without solid organ injury or other signs of hollow viscus perforation (Figure 1) with a score of 9 out of 14 in the Z score system [2]. Given the physical and computed tomographic findings, the patient was shifted to surgery. A midline trauma laparotomy was performed. Blood and clots of about 800 ml were seen upon entering the peritoneal cavity. No enteric content was visualized. Defects in the mesentery with bowel contusions and localized contained single perforation were seen with active bleeding from the mesentery (Figure 2). Defects were noticed at 30 and 70 cm from the ileocecal valve. The perforation was located at the mesenteric side of the lowest mesenteric rent. Resection of the injured bowel and end to end anastomosis was done. Upon the exploration, the cecum was noticed to be bruised, with a contused and transected appendix without local signs of inflammation (Figure 3). The distal part that was still attached to the cecal wall was showing a picture of torn and de-gloved wall. Limited mobilization of the cecum and ascending colon was done to rule out concomitant posterior colonic injury. Exploration was within normal. Complete visceral and vascular sweep was done and showed no further abdominal injuries. Formal CT scan report was available at the conclusion of the trauma laparotomy and showed the presence of diffuse aortic atherosclerotic changes with evidence of pseudo aneurysm of the proximal descending aorta . Vascular surgery team were immediately involved, and an endovscular aortic stenting was placed uneventfully after 48 hours.

A retrosepctive discussion with the radiolgost showed proximal enhancement of the appendix with distally less enahncing appendicular wall, with a transected appendix (Figure 4). Pathology of the appendix also confirmed no appendecitis with findings keeping with congestion and hemorrhage related to the trauamtic event.

Patient had an uncomplicated hospital stay and was discharged home in a good condition.

Figure 1. Showing hemoperitonuim and the appendix within the blood

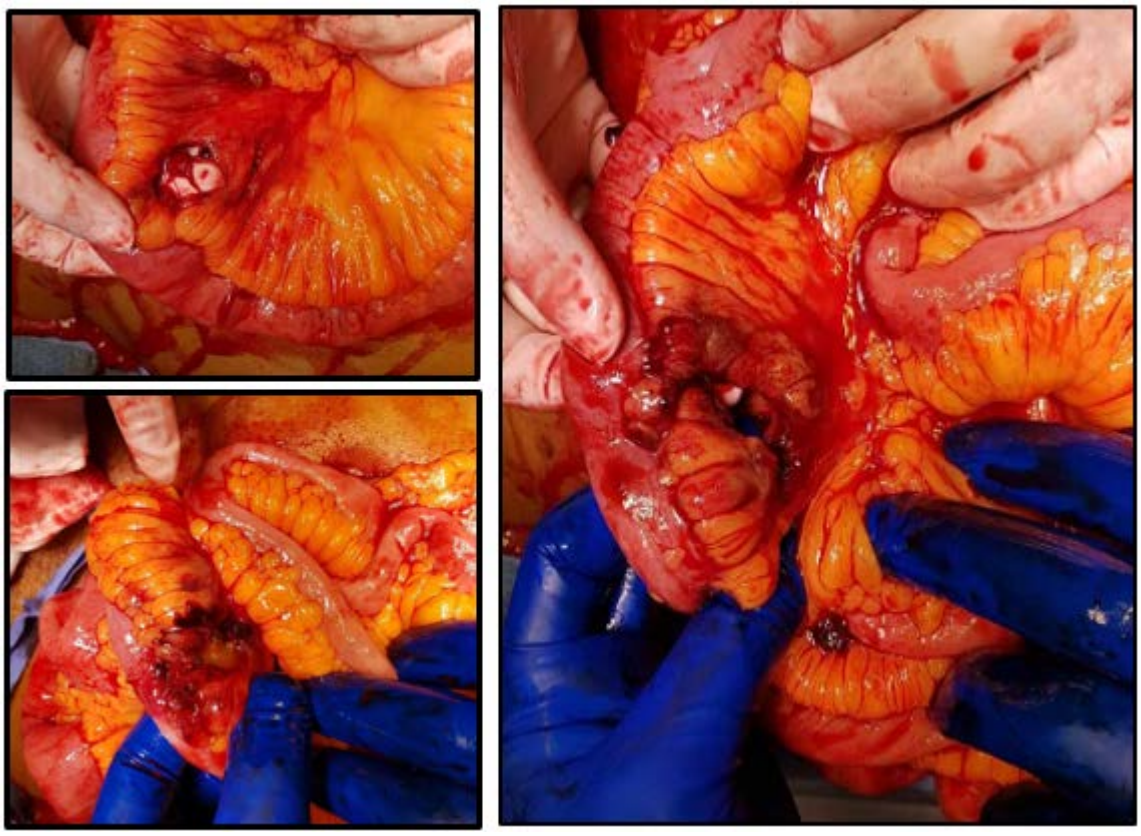

Figure 2. Showing different mesenteric defect injuries “bucket handle“

Figure 3. Showing a transected appendix

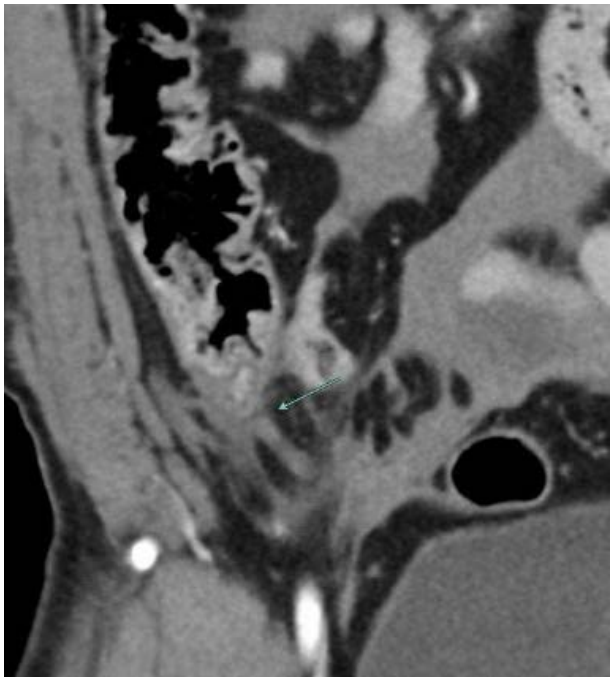

Figure 4. Showing the transected appendix in the CT scan

3. Discussion

The normal appendix is a tube like structure that is attached to the mesentery so it has a wide range of movement making it a high mobile structure, thus less chance of injury during trauma [3].

Acute appendicitis post trauma is one of the rare complications of blunt abdominal injury as compared to intraluminal obstruction and bacterial overgrowth causing the inflammation of the appendix.

With the rise of blunt abdominal trauma secondary to MVC, more and more cases are currently reported. Most of the literature involving appendicular pathology and trauma are mainly related to post blunt trauma acute appendicitis. Rare cases of appendicular transection are worldwide reported. Fowler and Ramsook have both worked on identifying some criteria for traumatic appendicitis which is based on many factors including the absence of abdominal pain prior to the trauma and no history of previous appendicitis attacks [4,5].

In restrained drivers, most of the injuries occur due to the seatbelt, causing seatbelt injury syndrome, which includes but not limited to, bowel perforation, tears and transections of the intraperitoneal and retroperitoneal organs. Serial abdominal examination is key factor for early diagnosis of non-CT detectable [6]. In non-restrained drivers, it is mainly due to steering wheel and dashboard injuries. Therefore, in patients with abdominal findings and high suspicious of injuries, a prompt management should be obtained to prevent further damage and mortality [7].

In all cases reported to have appendicular transection, the patients were found to be hemodynamically stable, and lacking any peritoneal signs of abdominal injuries [6]. Most of the time, the transaction is discovered after the first 24 hours of admission due to progressive signs of acute appendicitis like-picture on subsequent days. Our patient was taken much earlier to the operating room based on the deranged hemodynamics and abnormal physical findings and the subsequent findings of associated small bowel and mesenteric injuries.

4. Conclusion

Blunt abdominal trauma usually results in solid organ and to a lesser degree to hollow vicious injuries. Appendicular injury is not common but it can occur, hence the need to have high index of suspicions susceptible trauma victims.

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