CASE REPORT

Degloving Injury of Ascending Colon Following Blunt Abdominal Trauma

Tharveen N[1], Andre D[1], Firdaus O[1], Hayati F[2], Affirul CA[3]*

[1] Hospital Kajang, Selangor, Malaysia, [2]Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Sabah, Malaysia, [3]Faculty of Medicine, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia

Abstract:

Degloving injury to the colon caused by blunt abdominal trauma is an extremely rare injury. To our knowledge, this is the first reported case of degloving injury to the ascending colon in the literature which further accentuates the rarity of this case report. This is a 40-year-old gentleman who was a motorcyclist, had a road traffic incident where he was hit by a car from the back. On arrival, he was hemodynamically stable but there was tenderness over right side of the abdomen. Computed Tomography (CT) of the abdomen showed large ascending colon haematoma with contrast extravasation. An emergency laparotomy revealed a degloving injury of the ascending colon and the mesentery thus, a right hemicolectomy was performed. The postoperative course was uneventful and patient was discharged well. We describe a 40-year-old gentleman who had involved in road traffic accident, sustained degloving injury to the ascending colon and discuss its literature review.

Keywords: Abdominal Injuries, Ascending Colon, Traffic Accidents

Introduction:

Overall incidence of blunt colonic injury following a blunt abdominal trauma is relatively low [1]. Mechanisms of injury are usually due to direct damage, ischemia secondary to mesenteric vessels injury and closed loop compression injuries [2]. Direct damage can further be classified into contusions, serosal tears, lacerations, transactions or degloving injury. Degloving injury most of the time occurs on the limbs following a blunt trauma. However, degloving injury to the colon is extremely rare and there are only few reported cases worldwide [3]. The proposed mechanism of this injury is thought to be a combination of blunt abdominal trauma associated with a shearing force [4]. To our knowledge, this is the first reported case of degloving injury to the ascending colon in the literature. We describe a 40-year-old gentleman who had involved in road traffic accident, sustained degloving injury to the ascending colon and we highlight the rarity of this case.

Case Report:

A 40-year-old gentleman had involved in a road traffic accident in which there was a collision between a motorcycle and a car. He was the motorcyclist, wearing a helmet and claimed to be hit from the back. The exact mechanism of the injury was uncertain. He otherwise had no co-morbid or surgical history. He was brought in to the Emergency Department (ED) by an ambulance.

Upon assessment, the airway and breathing were secured. However, the patient was noticed to develop a stage 3 hypovolaemic shock with hypotensive episodes and tachycardia (heart rate about 110 beats per minute). He was immediately given about 20 mL/kg of crystalloids via 2 large bore of intravenous cannula. He was a responder and hemodynamically stable after fluid resuscitation.

Abdominal examination showed tenderness over the right side of the abdomen with evidence of bruises and no distension or guarding. There was also a puncture wound over the left shin with deformity but no active bleeding. There was no evidence of pelvic injury. His Glasgow coma scale was full with equal and reactive pupils and no lateralizing signs. Log-roll showed no abnormalities as well.

Focused Abdominal Sonography in Trauma (FAST) was done and there was fluid in the Morrison's pouch. Chest and pelvic radiograph showed no pathology however patient sustained a left displaced tibia and fibula fracture which was evident from the left lower limb radiograph. Blood investigations were unremarkable. In view of positive FAST scan, a Contrast Enhanced Computed Tomography (CECT) of the abdomen was ordered.

CECT of abdomen showed a large ascending colon haematoma with contrast extravasation which was suggestive of active haemorrhage (Fig. 1, 2).There were also grade 1-2 liver injury with free fluid at the peri and subhepatic, Morrison's pouch, right lumbar extending to right paracolic gutter and pelvic.

Decision for laparotomy was made afterwards. Haemoperitoneum noted intra-operatively estimated about 3.3 litres. The serosa and muscle layer of the ascending colon just distal to the hepatic flexure were stripped off in a degloving fashion about 6 cm with haematoma. The remaining mucosa tube showed no perforation however appears non-viable and the mesentery was torn as well. A right hemicolectomy was then performed and the mesentery was repaired. An impression of degloving injury of the ascending colon and mesentery tear was made.

Patient was then transferred to Intensive Care Unit (ICU) for stabilisation for one day and was then transferred back to the general ward. He was started on feeding by day 2 post operatively and the recovery was unremarkable. He was discharged after 7 days post-operatively. The histopathological report of the resected colon was consistent with the diagnosis of degloving injury. He was seen in our surgical clinic after discharge and was well without any active complaints.

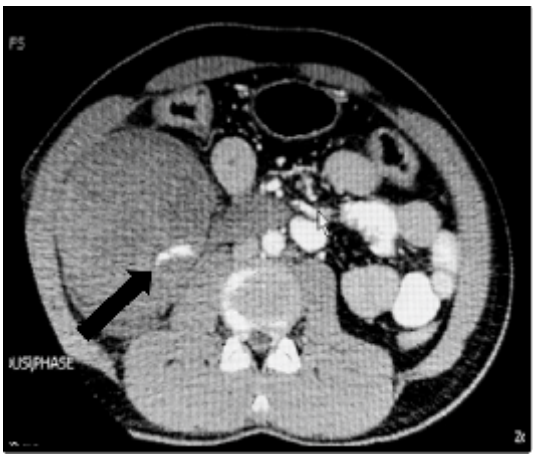

Fig. 1: Contrast Extravasation was Seen within the Ascending Colon (Black Arrow)

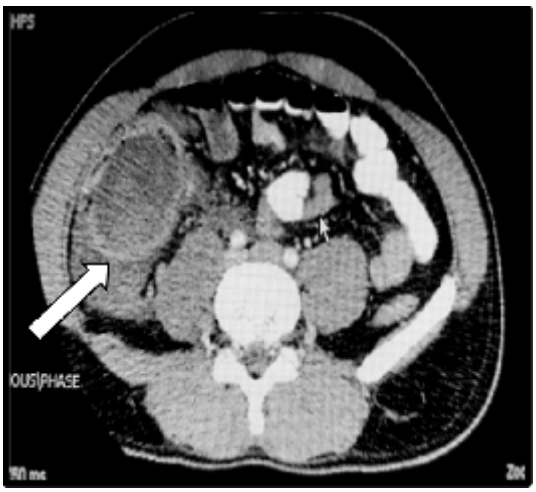

Fig. 2: Large Haematoma was Visualized in the Ascending Colon Haematoma (White Arrow)

Discussion:

Blunt colonic trauma is rare and occurs in less than 5% of the patients [3]. It usually involves the transverse and sigmoid colon because they are mobile and can easily be hit against the spinal column or iliac crest [3]. In this patient, ascending colon was involved which is extremely rare due its retroperitoneal location.

Degloving injury to the ascending colon has never been described in the literature and this is probably the first case report in the literature. There are few cases reported on degloving injury of the descending colon in which the mechanism of injury was thought to be from direct crushing force to the left costal margin which may cause shearing of the colon in a plane of weakness [2, 4]. The same principle can be applied in our patient as well. In addition in this patient, an acute haematoma dissecting between the muscle layers is another possible cause. Furthermore, as a result of the degloving, the mesentery can also be injured which is evident in this patient which have led to the non-viability of that particular degloved segment.

Diagnosis of degloving injury is usually made as an incidental finding intra-operatively rather than pre-operatively like in this patient [5]. The presentation can be delayed especially when the injury does not involve the full thickness of the colon and perforation can occur later as the necrosis process of the injured colon continues [3]. CT scans are not always a reliable tool in exhibiting colonic injury after a blunt abdominal trauma [6]. There are few signs that may suggest bowel injuries such as extravasation of oral contrast, extra luminal gas, unexplained free fluid, focal bowel thickening and mesentery streakiness [3]. The last two signs may not be a definite indication for a laparotomy however raises possibilities that a delayed perforation secondary to ischemia can occur. In this patient, there was contrast extravasation indicating significant mesenteric vascular injury which warrants an operative intervention.

Conclusion:

Blunt abdominal trauma can cause unexpected injuries which has the possibility to present late where degloving injury of the colon is one of them. High clinical suspicion with a CT will help in deciding for surgical intervention as delayed operative intervention can lead to significant morbidity and mortality.

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[*] ***Author for Correspondence:*** *Dr. Firdaus Hayati, Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Sabah, Malaysia. E-mail: firdaushayati@gmail.com. Tel: 088-320000*