Fulminant pneumatisis coli: A rare presentation of hollow viscus injury after blunt abdominal trauma

Dear Editor,

Hollow viscus injury (HVI) is rarely encountered in the Emergency Department as it occurs in <1% of patients presenting following abdominal trauma.[1] Colonic injury following blunt trauma is reported to account for just 0.35% of presentations with isolated colonic HVI accounting for just 344/220,000 patients in a major US trauma study.[1] It is usually part of a catalogue of injuries sustained following significant trauma, rarely occurs in isolation and it is highly unusual to be sustained from a fall from standing. We present a rare case of pneumatisis coli in an elderly patient following delayed presentation after a simple fall with blunt abdominal trauma.

A 76-year-old man presented to the Emergency Department following a mechanical fall under the influence of alcohol. He
complained of pain on the right side over his hip joint and had difficulty weight bearing.

His past medical history included severe chronic obstructive pulmonary disease requiring home oxygen (typically 18 h/day), mitral valve prolapse and a daily consumption of 14 units of alcohol. His drug history included oral steroids and bronchodilator inhalers.

During examination he was found to be hemodynamically stable and tender over the right hip. Plain X-rays and computed tomography (CT) scan of his right hip were performed, which were reported as normal and the patient was discharged home with analgesia once his inebriation had subsided.

Two days later he returned to the Emergency Department with right-sided abdominal pain and peritonism. Although hemodynamically stable, his inflammatory markers were significantly raised (white cell count — 16.4, C-reactive protein-127).

A further CT scan [Figures 1 and 2] revealed pneumatosis coli of the right colon with associated pericolic inflammatory stranding but no free gas or fluid. The patient was admitted under the surgical team and treated conservatively with oxygen, analgesia, intravenous antibiotics and fluids. Deemed unfit for general anaesthetic he deteriorated and died 2 days later with generalised peritonitis.

Pneumatosis coli is a radiological sign defined by the presence of gas within the wall of the intestine. Its aetiology can vary greatly and its presence can be incidental or herald disaster. Most commonly it is the result of a necrotising bowel process such as bowel ischaemia, infarction, necrotising enterocolitis or sepsis, and the clinical picture is that of acute abdomen, with or without other systemic features. It is rarely reported in the context of blunt abdominal trauma and HVI.

In our case, it is likely that the minor trauma from a fall on the right side caused a small disruption of the caecal colonic mucosa (American Association for the Surgery of Trauma Grade I colonic injury) allowing air to track intramurally. In an elderly patient, with severe disabling co-morbidity and on immunosuppressant therapy this progressed to a full thickness perforation and peritonitis over the next few days.

Early diagnosis is the key to favourable outcomes following an HVI. Fakhry et al. demonstrated that delay to operation following blunt small bowel injury results in significantly higher mortality rates, from 2% within the first 8 h, to 30% if the delay is >24 h. In our case, neither clinical nor radiological signs were present on initial assessment and ultimately the delay would have made little difference to the outcome as the patient was not fit for intervention. However, in a younger patient prompt surgical intervention in the form of a damage control laparotomy and right hemicolectomy would have been the likely operative outcome.

Isolated pneumatosis coli is a rare but potentially serious presentation of HVI following blunt abdominal trauma. Although, usually diagnosed as an incidental finding during imaging, in the context of a trauma episode it may be associated with delayed presentation and progression to complete bowel perforation and peritonitis. A high index of suspicion of HVI after blunt abdominal trauma is essential.

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Dear Editor,

A 63-year-old male presented to our Emergency Department for complaints of slurred speech and weakness of left upper extremity since 1-week. He has a prior history of hypertension, chronic obstructive lung disease, hyperthyroidism, anterior myocardial infarction, ischemic cerebrovascular accident, and recurrent transient ischemic attacks. A previously obtained coronary angiography demonstrated a totally occluded left anterior descending coronary artery at its proximal portion and stent implantation in a different session. On admission, his vital signs were normal, and electrocardiography evaluation demonstrated pathologic Q waves in the V1-V4 leads. Routine laboratory testing revealed normal electrolyte levels, renal, and liver functions. His activated partial thromboplastin time and prothrombin time with international normalized ratio were elevated (35.6 s "24-35 s" and 34.9 s "11-17 s" with 3.27 s "0.8-1.2 s," respectively) due to his Coumadin therapy. Cranial computed tomography without contrast agent was ordered and depicted old infarct areas in the regions of left occipital lobe with the posterior part of the left parietal lobe and also findings of acute infarction in the left parietal lobe and periventricular areas. Apical four chamber view point-of-care cardiac ultrasonography (POCUS) performed by the emergency physician (EP) using a Mindray M7® model ultrasound machine with a 3.6 mHz microconvex transducer (M7, Mindray Bio-medical Electronics Co., Shenzhen, China) revealed an enlarged left ventricle (LV), akinetic and aneurysmatic anterior wall, and a large, highly mobile pedunculated hypoechoic mass (1 cm × 2 cm) attached to the interventricular septum and LV apex junction, protruding the LV cavity [Figure 1]. Computerized tomography with contrast agent of the thorax revealed contrast filling defects in the same anatomical region of the LV cavity [Figure 2]. Cardiovascular surgery and neurology recommended an operational removal of the thrombus, but the patient refused the operation. He was discharged from the hospital with recommendations on anticoagulation and a follow-up plan. POCUS has evolved into a critical skill for the EP and has been utilized in a myriad of clinical

REFERENCES

1. Williams MD, Watts D, Fakhry S. Colon injury after blunt abdominal trauma: Results of the EAST multi-institutional hollow viscus injury study. J Trauma 2003;55:906-12.
2. Pear BL. Pneumatosis intestinalis: A review. Radiology 1998;207:13-9.
3. Fakhry SM, Brownstein M, Watts DD, Baker CC, Oller D. Relatively short diagnostic delays (<8 hours) produce morbidity and mortality in blunt small bowel injury: An analysis of time to operative intervention in 198 patients from a multicenter experience. J Trauma 2000;48:408-14.

How to cite this article: Waterland P, Jones AD, Peleki A, Zivetti M. Fulminant pneumatosis coli: A rare presentation of hollow viscus injury after blunt abdominal trauma. J Emerg Trauma Shock 2016;9:40-2. Received: 23.05.15. Accepted: 17.07.15.