

Blunt Abdominal Trauma after Fall from 30 feet

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1. Abstract

A 48 year old man was transported to a level 1 trauma center after a fall from 30 feet. He was alert and oriented. The GCS was 15. His vital signs were BP 140/104, Pulse=102, Resp 26. The abdomen was soft and non-distended. There was minimal left and right upper quadrant tenderness without signs of peritonitis. He was able to move all 4 extremities and his peripheral pulses were intact. A FAST was negative. The initial CXR and pelvic films were also negative for fracture or other injuries. His hemoglobin was 15.3 with normal coagulation studies (INR=1.01 PT 11.4, PTT 20). The WBC was 15,960. The platelet count was 246,000. The initial serum lactate was 0.9. The patient was taken to CT for imaging. CT of the abdomen and pelvis revealed an L1 superior end plate fracture and a fracture of the transverse process of L1. There was mesenteric fat stranding in the right lower quadrant and near the inferior mesenteric vein just inferior to the neck of the pancreas (Figures 1-4). The possibility of pancreatitis with an inflammatory process along the transverse mesocolon was raised. The patient

was taken to the operating room for exploration.

Laparotomy revealed a devascularizing ileocolic mesenteric injury. Contusion of the head of the pancreas was evident. A peri-duodenal hematoma was present. The duodenum was Kocherized. The duodenum appeared intact. The head of the pancreas was contused. A segmental ileocolic resection was performed with a stapled side to side anastomosis. The proximal and distal bowel flow was assessed with a doppler and found to be normal.

Methylene blue dye was instilled into the stomach. The third portion of the duodenum was compressed. No duodenal leak was noted. A 7 French Jackson Pratt drain was placed in the paraduodenal area and the abdominal incision was closed. The post-operative course was benign. He tolerated full liquids on day three and was discharged to home on day 6 after working with physical therapy. The patient was seen in the office 2 weeks after admission and was complaining of loose stools at that time. He was reassured that this symptom would resolve and at his one month visit he was completely asymptomatic.



Figure 1:



Figure 2:



Figure 3:



Figure 4:

2. Discussion

Although blunt bowel and mesenteric injury is uncommon one must maintain a high index of suspicion for these injuries [1]. High speed deceleration events from motor vehicle collisions explain most blunt bowel injuries. Falls from a height is another documented cause [2,3]. Tethering of the bowel at points of fixation (distal to the ligament of Trietz or at the ileocecal valve area) explain the injury pattern [4]. The physical exam may be benign and this finding can not be used solely to exclude these injuries [5]. A normal lactate (present in our patient) also does not exclude these injuries. In this instance we must rely on CT imaging to provide critical information [6]. CT sensitivity has improved and false negative scans are much less likely in the current era [6,7]. Repeat CT scanning can enhance sensitivity and give the clinician confidence that the appropriate management is being pursued [8]. Free fluid is an important indicator of potential bowel injury [9]. Free fluid in the absence of solid organ injury should raise the clinicians radar regarding a potential mesenteric or full thickness bowel injury. It must also be noted that patients with small amounts of free fluid and a benign abdominal exam may be safely observed [10]. The greater the number of suspicious findings (bowel wall thickening, mesenteric stranding, free fluid, free air) the more likely bowel or mesenteric injury is present [11]. Operative exploration is straightforward and a thorough evaluation of the viscera must ensue. For the injury described ileocolic resection is standard and the likely explanation of the post-op diarrhea was the absence of the ileocecal valve. Contusion of the head of the pancreas in this patient should always make one consider an associated duodenal injury. Kocherizing the duodenum intraoperatively is helpful for a thorough evaluation of the 2nd and third portion of the duodenum and the head of the pancreas. Methylene blue was used as an adjunct to evaluate the integrity of the duodenum. It has been used to check the integrity of various visceral connections including Roux en Y esophagojejunostomy [12]. The absence of dye extravasation was reassuring that the duodenum was intact.

The superior endplate compression fracture of L1 was consistent with the history of a significant fall from height [13]. This fracture was not unstable and a brace for comfort along with adequate pain control was all that was required [14].

In summary, we present a case of a middle aged man who sustained blunt mesenteric injury in a fall from 30 feet. His clinical presentation was benign. CT prompted abdominal exploration and a significant ileocecal devascularizing injury was present along with contusion of the head of the pancreas. Ileocolic resection was curative. The patient made a complete recovery.

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