A rare case of Post traumatic jejuno-sigmoidal fistula - Radiological and Imaging approach
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Abstract: We report a rare case of post-traumatic enterocolic fistula between jejunum and sigmoid colon which occurred as a delayed complication of blunt injury abdomen. The patient had steering wheel injury in a road traffic accident six months back. At that time he was treated conservatively. Following a latent period he had developed jejunal stricture causing intestinal obstruction. He had also developed perforation in the distal part of obstructed jejunum and also perforation in the sigmoid colon because of mesenteric injury and ischemia. This had lead onto the formation of jejunosigmoidal fistula.

Keywords: post-traumatic enterocolic fistula, post-traumatic jejuno-sigmoidal fistula, small intestinal obstruction.

Introduction:
Enterocolic fistula is a complication that may follow crohn’s disease or colonic diverticulitis. It has also been reported following carcinoma involving sigmoid colon, intestinal T-cell lymphoma and as a complication of postoperative radiotherapy [1]. Enterocolic fistula occurring as a delayed complication of blunt injury abdomen is very rare and unusual. Contrast enhanced CT study plays major role in diagnosing this condition.

Case History:
A 31 years old male patient had history of road traffic accident with blunt injury abdomen (steering wheel injury) six months back. He was evaluated at that time in a peripheral hospital and was treated conservatively. One month after the accident he had passed lengthy fleshy material through anus! Again three months after the accident he had presented with abdominal pain and vomiting and was diagnosed as small bowel obstruction with bowel ischemia. But he was not taken up for surgery since the patient discharged against medical advice. Now six months after the accident he presented to our hospital with complaints of abdominal pain, vomiting, bloating sensation after eating, and gross loss of weight.

Blood investigations revealed anemia and hypoprotinemia. Abdomen erect x ray showed dilated small bowel loop (figure 1). Ultrasound examination of abdomen revealed gaseous distension of bowel loops, minimal ascites and bilateral pleural effusion. Single contrast barium enema study showed normal opacification of large bowel loops with small amount of contrast in the dilated jejunum. Long arrow shows outline of dilated jejunum. Short arrow shows contrast within jejunum.

Contrast enhanced CT study shows dilated proximal jejunal loop (arrow). Blood investigations revealed anemia and hypoprotinemia. Abdomen erect x ray showed dilated proximal jejunal loop (figure 1). Ultrasound examination of abdomen revealed gaseous distension of bowel loops, minimal ascites and bilateral pleural effusion. Single contrast barium enema study showed normal opacification of large bowel loops with small amount of contrast in the dilated jejunum. Long arrow shows outline of dilated jejunum. Short arrow shows contrast within jejunum.
examination was done which showed normal opacification of large bowel loops with minimal contrast entering into grossly dilated jejunum (figure 2). Double contrast barium enema study showed infused air entering into the dilated jejunum, representing jejunocolic communication (figure 3). CT abdomen was done with intravenous, oral and rectal contrast. It showed grossly dilated proximal jejunal loop (figures 4 & 5) and rest of the bowel loops were collapsed except sigmoid colon. Infused rectal contrast appeared to be directly entering into grossly dilated jejunum from sigmoid colon and jejuno-sigmoidal fistulous tract was clearly demonstrated in the axial, coronal and sagittal images (figure 7A, 7B, 7C).

Disinsertion of sigmoid mesentery had caused sigmoid perforation through which injured mesentery had found way to go outside (cause for patient’s history of passing fleshy material through anus). Fistula had been formed between raw area in distal part of dilated obstructed jejunum and raw area in sigmoid colon. Ascites and pleural effusion are due to severe hypoproteinemia.

Patient was taken up for surgery and our radiological findings were confirmed. The operative findings were: 1. Dilated proximal jejunum for about 30 cms from duodenojejunal flexure. 2. Mass formation involving omentum, jejunal and ileal loops with adhesions to peritoneum. 3. Mesenteric rent of about 10 cms with herniating jejunal and ileal loops (figure 8A). Fistula between proximal jejenum and midpart of sigmoid colon (figure 8B). Fistulous tract was released and primary closure of sigmoid colon was done. Mass formation from peritoneum was separated and resection anastomosis of jejunum done. Patient recovered well after surgery and was discharged seven days after surgery. Six days after surgery follow up x ray was taken and it showed no dilated bowel loops (figure 9).

Discussion:
Immediate complications following blunt injury abdomen are many and include solid organ injury, biliary leaks, hollow viscus perforation, peritonitis, mesenteric tear and infection. Delayed complications after blunt injury abdomen are rare and include small or large bowel stricture which is observed after conservative treatment of blunt abdominal trauma. The classical features of this entity include a time interval between trauma and onset of symptoms ranging from 3 days to 11 months and clinical and radiological signs of obstruction. Injury related focal segmental intestinal ischaemia plays an important role in the pathogenesis of post traumatic intestinal stenosis. These stenoses may be complicated by perforation probably due to ischemic ulceration. Delayed perforation of the sigmoid colon may also be caused by disinsertion of sigmoid mesentery. CT scan is the reliable method in detecting level and cause of obstruction[2]. In this patient the combination of both obstruction and perforation had occurred. Perforation had occurred in two places in distal end of dilated jejunum and also in sigmoid colon, which had resulted in jejuno-sigmoidal fistula and CT clearly showed the fistulous communication.

References: