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Beyond the surface bruises: masking perforated bowel post blunt abdominal injury with perforated loop herniated through a window in mesentry

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Introduction

In cases of blunt trauma to the abdomen, the injuries to the bowel and the mesentry are usually under diagnosed. In such cases due to the underlying pathology involving the bowel and Mesentery, there are high possibilities of ischaemia and necrosis leading to high instances of perforation, which leads to morbidity and mortality. Hollow viscus perforation and acute mesenteric ischemia are life-threatening conditions that must be recognized and managed appropriately.

Abdominal trauma caused by blunt force is a common presentation in the emergency room seen in adults and children the chief cause of blunt trauma I he united states is motor vehicle accidents .other rare causes includes fall from height,bicycle ,injuries susutained during sporting activities and industrial accidents .blunt trauma to the abdomen can occur in people of all ages associated with high chances of morbidity. Blunt blunt trauma can cause damage to to internal organs ,resulting in internal bleeding cause contusions or injuries to the bowel ,spleen,liver and intenstines .patient can also present with extraabdominal injuries such as extremity injuries.

Intenstinal perforation defined as loss of continuity of the bowel wall is a potentially devasting complication that may result from\ variety of diseases processes .common cause of perforation include trauma ,instrumentation ,inflammation ,infection, malignant , ischaemia and obstruction. early recognition n and prompt treatment are critical to prevent the morbidity and potential mortality of peritonitis and its systemic squelae that result from the spillage of intestinal contents exploratory laparotomy is also known as celiotomy .indications of exploratory laparotomy emergency or elective conditions ,inflamatorry conditions,grossly distended intenstines in intenstinal obstructions or massive ascites in patioents with end stage liver or cardiac disease emergency condition such as intraperitoneal bleeding ,uncontrollable gastrointenstinal bleeding

,blunt or penetrating abdominal injuries ,generalized interperitoneal s\epsis due to perforated gastrointenstinal tract are still the most common indicatios for laparotomy .elective procedure that involve as large speciamen ,in such as pancreaticoduodenectomy ,pancreatic or intenstinal transplant are also indication for laparotomy .

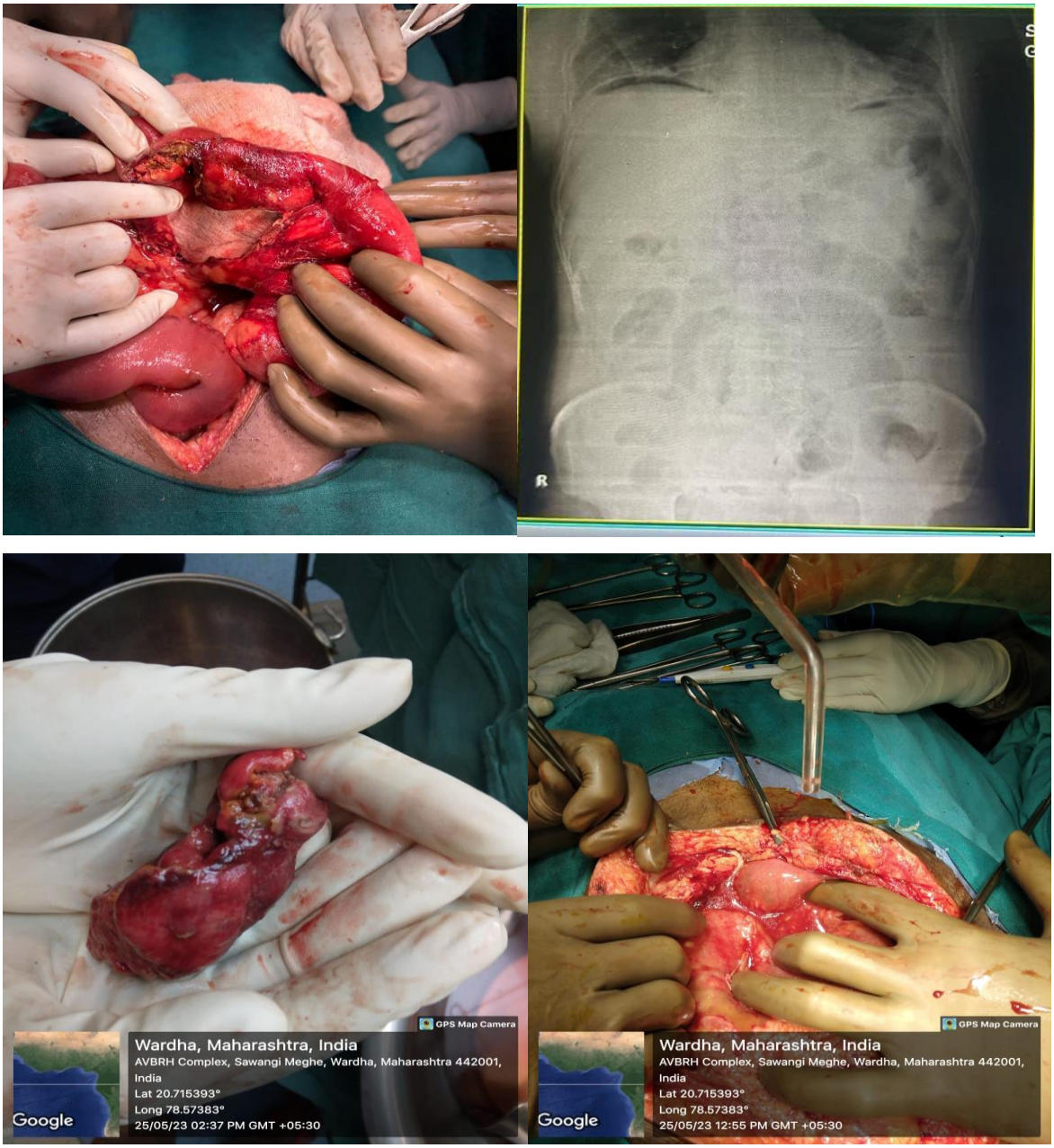

Figure 1: Perforated bowel loop

Case Report

52 year male camed with history of road traffic history where he suffered blunt abdominal trauma as bike handle injury patient presented with pain in abdomen with 2 episode vomiting which was billious in nature non projectile ,fever,chest pain ,cough

On examination patient vitals were pulse 126 bpm,bp:140/70 mmhg ,spo2 :90 on room air on per abdomen examination was done and findings were abdomen was soft ,mild tenderness all over abdomen ,mild guarding ,mild rigidity bowel sounds were absent .there were external injury over abdomen .

Respiratory system decreased air entry right side of lung ,left side crepts present .x-ray erect abdomen showed gas under diaphragm .

The CT scan of chest suggestive of multiple fractures involving right sided fifth to eighth rib with chest wall, emphysema with plural collection and pneumothorax.

There were no vascular or organ injuries, no vascular thrombosis, pneumatosis, or portal venous gas.

Ct scan abdomen and pelvis suggestive of pneumoperitoneum and small free fluid in keeping with hollow viscus injury probably .

Patient was initially stabilized with icd insertion over right side and was initially managed conservatively for suspected perforation

Patient was planned for exploratory laparotomy as there seen

Intra operative findings : pus pockets ,laceration of bowel loop there is window in mesentry with multiple mesenteric tears .

Discussion

The mesenteric injury in patients with blunt abdominal trauma is due to compression and deceleration forces resulting in a spectrum of injuries ranging from contusions and tearing of the bowel wall shearing of the mesentery resulting in loss of vascular supply.[1,2]

In this case, a sudden increase in abdominal pressure could explain that missed rupture of the mesenteric border of the jejunum, also causing the mesenteric hematoma, or, in spite of that, a state of low perfusion could have lead to total wall ischemia of an already irrigation compromised segment.

The delayed diagnosis of haemorrhage of injured mesenteric vessels and peritonitis from bowel wall rupture or bowel ischaemia results in high Morbidity.[3] Patients with a slow oozing of blood from mesenteric haematoma can remain undetected for a long period of time clinically which leads to necrosis of bowel leading to peritonitis.[4]

Early detection and surgical intervention, is necessary because these are critical in improving the outcome of treatment. Diagnostic peritoneal lavage or trauma sonography should be used to assess patients who are haemodynamically unstable.

Haemodynamically stable patients may benefit from abdominal CT scans, which can localise free fluids, pneumoperitoneum, or mesenteric haematomas and can evaluate solid organ injuries.

In cases with minimal mesenteric lacerations or when a localised haematoma is present, the patient can be managed conservatively.

However, the finding of a moderate to large volume of intraperitoneal fluid without solid organ injury should prompt surgical assessment for bowel and mesenteric injury.

Our patient showed that the diagnosis of mesenteric injury should be considered even in patients who sustain only minor abdominal trauma and rapid diagnosis depends on a high index of suspicion of the emergency physician.

Conclusion

Small bowel and mesenteric injuries are associated with high morbidity and mortality . The diagnosis is challenging, especially in resource-constrained hospitals which are often bereft of adequate diagnostic tools. A high index of suspicion following detailed history and a thorough physical examination are essential in making prompt diagnosis.

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