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CASE REPORT

Superior mesenteric artery rupture as the sole manifestation of abdominal injury in a 17-year-old male after a car accident

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Introduction

A 17-year-old male with no significant medical history was admitted to our hospital after a car accident. Vague abdominal pain was his major complaint.

Physical examination revealed a heart rate of 120/min, a blood pressure of 140/60 and subtle sensitiveness in abdominal palpation. Abdominal CT examination was then performed.

Abdominal CT revealed a major amount of intraperitoneal fluid. No evidence of trauma was appar-

ent from liver, spleen, kidneys or pancreas. No evidence of fracture was apparent from the vertebrae, pelvis or ribs.

More scrutinised examination of the CT scan revealed an extravasation of blood with contrast medium in the area of the distal segment of the superior mesenteric artery (Fig. 1). Proximal segment of superior mesenteric artery appeared normal (Fig. 2). Paralytic appearance of the ileal loops is also evident. The wall of some ileal loops appeared enhanced.

Another finding of abdominal CT was pulmonary contusion signs in the area of right middle pulmonary lobe.

Superior mesenteric artery rupture was confirmed at surgery. There were no signs of bowel wall contusion.

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Figure 1 Extravasation of blood with contrast medium in the area of the distal segment of the superior mesenteric artery.

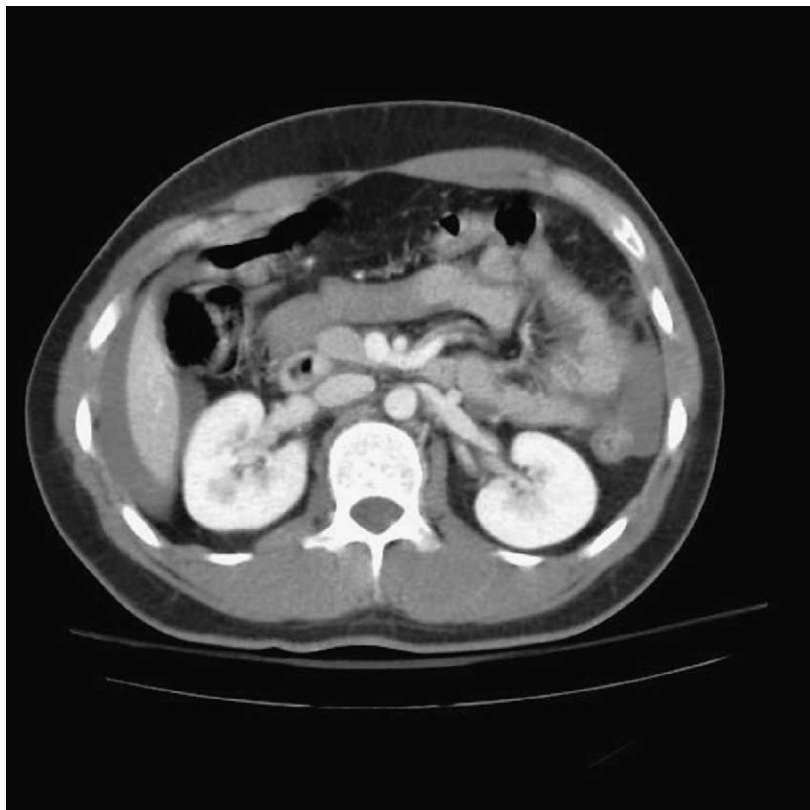


Figure 2 Proximal segment of superior mesenteric artery appears normal.

Brief discussion

Superior mesenteric artery rupture after a blunt abdominal trauma is a very rare event. It is found in less than 1% of all blunt abdominal trauma patients undergoing CT evaluation.^{1,3,5} Diagnostic peritoneal lavage has been used to detect free haemorrhages or intestinal contents as evidence of bowel or mesenteric injury and is considered by some to be diagnostically superior to CT.^{2,9} Abdominal sonography can be used to detect intraperitoneal free fluid but its accuracy to specifically detect bowel or mesenteric injury is likely poor.

Recently CT has been found in both surgical and imaging studies to have high accuracy for the detection of mesenteric injury.^{5,7,8}

CT signs of bowel injury include bowel wall thickening and/or enhancement, direct visualisation of tears in the bowel wall, intraperitoneal free fluid and pneumoperitoneum.

There is a high likelihood of finding a surgical lesion with active mesenteric contrast extravasation, bowel wall thickening associated with adjacent mesenteric infiltration or haematoma.^{4,6}

Mesenteric injuries can appear as hazy or streaky infiltration, or active bleeding within the mesentery. Active bleeding appears as high-density contrast material (within 10 HU of an adjacent contrast-enhanced artery) surrounded by lower

attenuation haematoma. Contrast extravasation into the bowel lumen may also occur.

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