CASE REPORT

Transverse colon rupture in a young footballer

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The case is reported of a 16 year old footballer who sustained a blunt abdominal injury resulting in traumatic rupture of the transverse colon and transverse process of L1.

A 16 year old footballer, who had just been selected for a football scholarship in the development squad for third division Swansea City, was playing for their under 17 side when he sustained a blunt trauma injury to his abdomen. As centre back, he had jumped to head the ball away and collided with his own goalkeeper's knees when the latter had jumped to punch the ball clear. At first it was thought that he had broken ribs. He was transferred to hospital by air ambulance and initially treated conservatively. When he failed to settle the following day, 24 hours after presentation, he had an ultrasound scan of his abdomen and then a computed tomography scan of his chest and abdomen. The computed tomography scan showed a fracture of the transverse process of L1 and appearances consistent with traumatic bowel perforation. At laparotomy there was found to be extensive free pus and feculent fluid with a ragged tear in the antimesenteric border of the distal transverse colon 6–7 cm in length (fig 1). The damaged portion was resected. The two ends of colon were brought to the skin as a colostomy and mucus fistula. The other internal organs were intact. The patient spent two days in intensive care after surgery for epidural analgesia and monitoring of vital signs.

He made an excellent recovery and is awaiting reversal of his colostomy 12 weeks after the injury before he returns to training and takes up his scholarship place.

DISCUSSION

Blunt abdominal trauma causing colon rupture is well recognised although rare. There are no previous reports of it occurring on the football pitch, although there are some case reports of duodenal and jejunal injuries,^{1,2} but not in the paediatric age group.

In children and adults, blunt abdominal trauma most commonly causes solid organ injury.^{3,4} Splenic injuries most often occur followed by hepatic, renal, and pancreatic injuries.^{3,5} However, when the bowel is injured, it is more usually the small bowel rather than the large bowel that is damaged,^{3,5} with large bowel injuries mostly occurring in high velocity injuries or with associated multiple trauma.⁴ The mechanism is usually a shearing force caused by compression between the anterior abdominal wall and pelvis or lumbar spine, or a direct blow causing contusion or laceration.⁶ Previously lap-type seat belts were a common culprit.⁶

Solid organ injuries are usually identified early because of resultant cardiovascular instability and increasing abdominal pain with or without peritonitis. However, in contrast, there is often considerable delay in diagnosis of bowel perforation. The current trend towards conservative management of blunt trauma can compound the delay in diagnosis.^{3,7} Initial

investigations may be negative, with no abnormality on blood tests, no free gas on initial chest radiograph, or abnormality on ultrasound.⁸ It may, however, be that perforation is a secondary insult following serosal or musculocutaneous tears that progress to full thickness tears because of secondary ischaemia.⁶ Nevertheless, signs of peritonitis or ileus or abdominal distension should alert clinicians to the possibility of intestinal rupture in blunt abdominal trauma⁸ even if there is a concomitant injury. In any patient with blunt abdominal trauma, regular review and consideration of perforation is essential.

There are many incidences within sport that can give rise to blunt abdominal trauma. It is easy to imagine many situations that may occur in any contact sport, motor sports, sports that require the achievement of height or velocity, and cycling (handle bar injuries are well documented as causing solid and hollow organ injuries⁹), but fortunately the actual numbers are relatively small (of 734 children admitted to hospital, only 3% sustained isolated bowel injury⁸). It is prudent to try to minimise these risks by sports physicians and coaches being aware and taking precautions as possible. It is also important that the sequelae of blunt abdominal trauma are considered on the field and that secondary care is involved at an early stage particularly as symptoms of bowel perforation may not initially be obvious.

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Permission has been obtained to publish figure 1

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Figure 1 Intraoperative findings of tear in transverse colon. Permission has been obtained to publish this figure.

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