A RARE CASE OF ISOLATED JEJUNAL BLOW OUT PERFORATION FOLLOWING BLUNT INJURY ABDOMEN

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Abstract

Small bowel injury following blunt abdominal trauma has been widely reported. Isolated jejunal perforation which is caused by blunt abdominal trauma is rare and is most often seen in road traffic accidents. Here, we present a case of isolated jejunal perforation due to raised intra-abdominal pressure in the form of abdominal trauma by physical assault. Explorative laparotomy revealed the stellate-like perforation on the anti-mesenteric border. Early surgical intervention led to good recovery. A high index of suspicion, repeated clinical examination and the proper utilization of investigational tools definitely helped us in managing these kinds of rare cases.

Key-words: Jejunum, Blunt Trauma, Perforation

Case History

A 40 year old male presented to emergency department with alleged history of assault by known persons using bare hands and foot and sustained injury to abdomen. His vitals were stable. Palpation revealed diffuse tenderness and guarding. Initial X-ray chest and abdomen were normal and patient was observed. After 6 hours, there was no improvement clinically and there was tachycardia. A repeat Xray was taken and it showed air under diaphragm. Emergency laparotomy done which showed isolated jejunal perforation with bile stained fluid. The perforation was along the longitudinal axis of the anti-mesenteric border and 30cms away from the ligament of Treitz. No other injury was seen. The ruptured jejunum was sutured primarily.

Introduction

Small bowel injury following blunt abdominal trauma is the commonest presentation in road traffic accidents. The isolated blowout perforation of the jejunum is extremely rare. We came across a cases of isolated jejunal perforations following blunt abdominal injury during 2016 in our hospital. Samuel Annan reported the first case of intestinal perforation following blunt abdominal trauma in 1837. Punctate or slit like perforations often occurring on the anti -mesenteric border are probably the consequence of a sudden increase in the intraluminal pressure in a fluid or air filled loop. Robbs et al., in 1980, reported five such lesions in Zulu tribesmen, which were mostly caused by a blow to the abdomen with a heavy, round-headed weapon. These perforations were not surrounded by damaged tissue and did not appear to result from a crushing type injury. They are referred to as “blowout” perforations. These perforations may be missed initially and may become apparent around three days after the injury or bowel ischaemia which is secondary to contusion, leading to stricture and delayed perforation occurs after 4 weeks.

Figure 1: Isolated jejunal perforation following blunt abdominal trauma

Figure 2: xray taken after 6hrs
Discussion:

Seventy-five percent of the blunt abdominal trauma cases are caused by motor vehicle accidents [1]. Although small bowel injuries have been reported to be the third most common injuries in blunt abdominal trauma, they occur in less than 1% of the blunt trauma patients [6, 7]. The mechanisms of small bowel injuries with blunt trauma include shearing forces, compression between the abdominal wall and the vertebral column and bursting injury due to a sudden increase in the intraluminal pressure. The isolated “blowout type” of rupture of the jejunum following a physical assault is uncommon [8]. This leads to a sudden increase in the intra-abdominal pressure, which in association with a full stomach, can lead to this kind of perforation. Physical examination is not adequate on its own for the diagnosis of such cases, and it was found to be reliable in only 30% of the blunt trauma cases [7]. Fakhry et al [8] observed that 67.7% out of 198 patients with blunt small bowel injury, initially presented with signs or symptoms which were highly suggestive of perforative peritonitis and 84.3% were taken to the operating room without delay. X ray of the erect abdomen, USG, diagnostic peritoneal lavage and CT of the abdomen are most commonly used diagnostic aids other than physical examination. According to Burney et al [11], peritoneal lavage has proven to be sensitive for the demonstration of the haemoperitoneum, but it was found to be less reliable in the early diagnosis of intestinal injuries. The gold standard for the assessment of blunt trauma diagnosis is C T scanning, with a sensitivity of 92% and a specificity of 94% [12]. In recent times, laparoscopy has played an important role in the diagnosis as well as in the treatment of blunt abdominal trauma. Diagnostic laparoscopy should be preferred instead of diagnostic peritoneal lavage in relatively haemodynamically stable patients. Most of the patients will be having punctuate or slit like perforations on the anti mesenteric border and so, ideally they require laparotomy and the primary closure of the perforation, with peritoneal lavage. Now, with the advent of laparoscopy, it is possible to close the perforation by using endosutures or staplers [13]. Small bowel perforation has low mortality and complication rates if it is treated before 24 hours after the injury [9]. Delayed jejunal perforation is often associated with high mortality and morbidity. Since 1990, 9 cases of isolated jejunal perforations have been reported [Table/Fig-4], but the nature of the injury which was seen in our cases was different.

Conclusion

We can conclude that diagnosis of traumatic jejunal perforation is challenging. For optimal outcomes, vigilance is needed together with the maintenance of a high index of clinical suspicion. This is achieved with repeated physical examinations and the available appropriate imaging modalities.

References