Introduction

Intramural duodenal haematoma (IDH) associated with blunt abdominal trauma is a rare condition. Patients usually present with gradual onset of vomiting and abdominal pain approximately 48 h after the injury. The haematoma usually resolves in 1–3 weeks with conservative therapy. Traditionally operations are reserved for patients with suspected duodenal perforation, bile or pancreatic duct compression and inadequate resolution of the haematoma after 7–14 days of conservative treatment. However, with advances in parenteral nutrition and critical care, we believe that prolonged conservative treatment should be acceptable in patients without perforation.

In this report, we describe a patient with large IDH associated with blunt abdominal trauma causing gastric outlet obstruction and obstructive jaundice who had successful outcome after a long period (more than 3 weeks) of conservative treatment.

Case report

A 19-year-old man presented to the emergency department 6 h after a car accident. He had lost consciousness for a while and could not remember the event. On physical examination, his blood pressure was 116/60 mmHg, pulse rate 83 per minute, respiratory rate 20 per minute and temperature 37.4 °C. He had multiple lacerations on the forehead and a small laceration on the upper lip. He was fully alert (Glasgow coma scale score 15) and had no neurological deficit. Abdominal examination showed mild tenderness and small contusion at right upper abdomen. Abdominal ultrasonography was negative for free fluid and CT of the brain was unremarkable. After wound suturing, the patient was admitted for observation.

Twenty-four hours after admission he developed abdominal pain and vomiting. Abdominal examination revealed a palpable, tender mass at epigastrium. Laboratory examination showed slight haemoconcentration (haematocrit level 45%), marked leukocytosis (23,320 cells/µl) with PMNs predominance (91.6%) and increased serum amylase level (162 U/ml). CT of the abdomen demonstrated an IDH 4.4 cm × 7.5 cm in size with fluid collection at right anterior renal and right perirenal spaces without other solid organs injury. The diagnosis of an IDH was made and conservative treatment was started with absolute bowel rest, nasogastric tube suction, intravenous fluid administration and total parenteral nutritional support.

During the early period of conservative treatment, he had persistent abdominal pain, enlarging abdominal mass, voluminous daily NG drainage (1100–1600 cm³/day) and increasing jaundice. Laboratory examination on day 5 showed decreased haematocrit level (29.6%), mild leukocytosis (15,660 cells/µl), decreased serum amylase level (124 unit/
ml) but raised serum bilirubin level (total bilirubin was 11.64 mg/dl and direct bilirubin 7.99 mg/dl) while liver enzymes were within normal limits. Plain abdominal X-ray showed a large soft tissue mass in the upper abdomen. CT of the abdomen on day 14 demonstrated an increase in size of the haematoma at second and third part of the duodenum (14 cm/C2 6.1 cm) causing CBD and intrahepatic bile duct dilatation (Fig. 1).

Despite these findings, conservative treatment was continued. His symptoms gradually improved. Daily NG drainage progressively diminished and oral intake was commenced on day 33. The bilirubin level which was highest on day 9 (total bilirubin 22.4 mg/dl and direct bilirubin 14.2 mg/dl) became almost normal (total bilirubin 4.4 mg/dl and direct bilirubin 2.5 mg/dl) on day 34. The abdominal pain, mass and jaundice had completely resolved when the patient was discharged home on day 37 on normal oral intake. He was well and healthy when last seen at follow up clinic 5 months later.

Discussion

The extravasation of blood into the duodenal wall leading to obstruction was first described by M’Lauchlan in 1838.4 Thompson was the first one who established a traumatic basis for duodenal haematoma in 1855.4 Other miscellaneous causes of duodenal haematoma include spontaneous haematoma from bleeding disorder or anticoagulant, pancreatitis, peptic ulcer disease and aortoenteric fistula.1,3,10,13 IDH is a rare entity following blunt abdominal trauma and more frequently seen in children than adults.9 The diagnosis of IDH is usually made by clinical suspicion and imaging studies including upper GI study, ultrasonography and CT scan.

The first successful operative management of IDH was described by Stirk in 1953, and after that it had become a standard treatment for IDH.4 Procedures varied from simple evacuation (in most uncomplicated cases) to bypass procedure (in perforated or severely injured duodenum) with complication rate of 7—29%.4,6,9

With advances in parenteral nutrition, conservative therapy for IDH has become an acceptable first line of treatment, comprising nasogastric drainage, intravenous fluid administration, parenteral nutritional support and careful observation. Operations are now reserved for patients with suspected duodenal perforation, bile or pancreatic duct compression and failure of resolution of the haematoma after 7—14 days of conservative treatment.6,9,12 New less invasive methods have been advocated such as laparoscopic drainage and CT guided percutaneous drainage of IDH after failed conservative treatment.5,8

In this report, we describe a patient with IDH from blunt abdominal trauma who underwent successful conservative treatment despite obstruction of the common bile duct and relatively long period of bowel rest (33 days). Our observation was in agreement with previous report of successful outcome after 1 month of conservative treatment for IDH.2 There are also some other points regarding IDH with obstructive jaundice that deserve to be discussed. We question the benefit of operative intervention to relieve obstructive jaundice caused by IDH in the absence of cholangitis as recommended by some investigators.6 Furthermore, if cholangitis does present, we would prefer the non-operative approach (e.g. percutaneous transhepatic biliary drainage, PTBD) because of the self-limiting natural course of IDH. In this report, our patient recovered from obstructive jaundice without biliary drainage procedure.

The authors still advocate operative treatment in cases with suspected perforation of the duodenum. Diagnosis of duodenal perforation can be made on clinical ground (fever and/or peritonitis), and confirmed by imaging studies. Although CT provides excellent anatomic details of the retroperitoneum, duodenal perforation cannot always be distinguished from IDH because the CT findings of periduodenal fluid or wall thickening may be found in both entities. Specific findings of duodenal perforation from CT scan include retroperitoneal air or contrast leakage.7 Duodeno-graphy has a low sensitively (25%) and should not be used solely to exclude duodenal perforation.11

In conclusion, prolonged conservative treatment for IDH is safe and practical. It should be considered as the first line of treatment of IDH in patients without suspected duodenal...
perforation. A long period of bowel rest is acceptable. Bile duct obstruction from IDH is not an absolute indication for operative or radiologic intervention as suggested by some investigators. Close monitoring of the patients is mandatory, and surgery should be reserved only for patients with suspected duodenal perforation.

References