Case report

A perforated duodenal ulcer in a child

P D R Sisil Kumara¹, W A K Weerawardena² and S T Esufali³

Ceylon Medical Journal, 2000; 45: 133-134

(Key words: Steroids, perforation and peritonitis, simple closure)

Introduction

Duodenal ulceration is seldom diagnosed in young children, perforation being even rarer (1,2). Some present with recurrent abdominal pain and anaemia, whereas others have haematemesis or melaena with or without perforation (1,2,3). In children, the causes of peptic ulcers are different from those of adults. The usual causes are non-steroidal anti-inflammatory drug treatment, head injury, overwhelming sepsis, burns, major surgery, steroid therapy and Helicobacter pylori infection, acting alone or in combination (1,4,5). The ulcers could be acute or chronic, acute ulcer being commoner in the infant and the young child, and chronic ulcer in the older child (1,2). We report an unusual case of a perforated acute duodenal ulcer in a child following steroid ingestion.

Case report

A 3-year old boy who was previously in good health, presented with a 24-hour history of haematemesis, melaena and abdominal distension. Before this he had four days of fever and a skin eruption, for which he had been given paracetamol 250 mg 8 hourly, chlorpheniramine 2 mg 12 hourly and prednisolone 2.5 mg 8 hourly at a local hospital.

On examination, he looked ill and irritable with a fever of 38°C. He was not pale, and appeared well hydrated. His pulse was 120/minute, of good volume, and his blood pressure was 90/60 mmHg. Abdominal palpation showed distension, tenderness and guarding over all quadrants. Liver dullness was absent. Free fluid was not detected clinically. Bowel sounds were absent. Digital examination of the rectum revealed melaena.

Erect chest xray (see Figure 1) showed gas under the diaphragm and an abdominal ultrasound scan revealed a fluid collection in the left sub-phrenic space.

Figure 1. Pre-operative erect chest xray showing sub-diaphragmatic pneumoperitoneum

A nasogastric tube was passed. Intravenous antibiotics (gentamicin and metronidazole) and crystalloids were started, and urine output monitored with an indwelling catheter.

An emergency midline laparotomy showed free purulent fluid in the peritoneal cavity, including the pelvis and sub-phrenic spaces. There was a perforated ulcer, 1 cm in diameter on the anterior border of the first part of the duodenum. A biopsy was taken from the edge and the ulcer was closed with 3/0 interrupted sutures. An omental patch was applied and a thorough peritoneal lavage was carried out using warm isotonic saline. Intravenous gentamicin, metronidazole and cimetidine were continued for one week. The child recovered, and was discharged after 9 days. The biopsy was reported as acute inflammatory tissue.

¹Senior Surgical Registrar, and ²Surgical Registrar, Teaching Hospital Peradeniya, and ³Department of Surgery, Faculty of Medicine, University of Peradeniya (Revised version accepted 15 August 2000).
A perforated duodenal ulcer in a child

Discussion

The abdominal signs in this child confirmed peritonitis although it is reported that children with perforation may have minimal signs, some even having a soft abdomen with normal bowel sounds (2,3). The absence of liver dullness and the presence of gas under the diaphragm on the x-ray suggested a perforation of a hollow viscus. Haematemesis and melaena localised it to the upper gastrointestinal tract.

Laparotomy and thorough peritoneal lavage are important in addition to simple closure, omental patch and omental plug (2,3,4,6). It is important not to narrow the duodenal lumen during the procedure (6). Recently there are reports of non-operative treatment with intravenous fluids, antibiotics, antacids and nasogastric aspiration (7). With the advent of laparoscopic surgery, some centres have reported successful treatment of perforated duodenal ulcers using this technique (8). The prognosis after surgery for perforated duodenal ulcer in children is good, with no mortality reported (2,3,5).

The aetiology of the perforated ulcer is the main reason for reporting this case. Of the described causes, we identified steroid administration in the backdrop of a stressful setting for this child. This has been previously reported (5).

Post-operatively, the child was not put on long-term anti-ulcer therapy, nor was he given anti-Helicobacter treatment, because we did not suspect chronic ulcer disease in the absence of previous recurrent abdominal pain or anaemia. The biopsy of the ulcer at surgery showed acute changes only.

At the clinic visit two months after discharge from hospital, we found him to be symptom free, and he was not scheduled for endoscopy. It is reported that acute duodenal ulcer in the young child recurs only rarely after the treatment of the presenting problem (1,2).

References


