

Rare disease

Small bowel perforation secondary to enteric *Salmonella paratyphi* A infection

J A Dunne, J Wilson, J Gokhale

Department of General Surgery, Bradford Hospitals NHS Foundation Trust, Bradford, UK

Correspondence to Dr Jonathan A Dunne, jonathan.a.dunne@gmail.com

Summary

A patient of Pakistani-origin was admitted to Bradford Royal Infirmary, UK, following a 3-week history of cough, headache and general malaise. He had recently spent 10 weeks in Pakistan and on return had been diagnosed in the community with Swine flu. He developed abdominal pain and diarrhoea in the week prior to admission, and presented to hospital with fever, tachycardia and raised inflammatory markers. He deteriorated rapidly, developing signs of peritonism and *Salmonella paratyphi* A was grown from blood cultures. CT demonstrated a small volume of free fluid within the abdomen and the patient underwent laparotomy. A small bowel perforation was resected and a side to side anastomosis fashioned. Treatment with intravenous antibiotics was completed and the patient was discharged 9 days postoperatively.

BACKGROUND

Enteric fever is recognised as a major disease burden in developing countries. In industrialised nations however, incidence is uncommon and predominantly follows travel to endemic regions.¹ Paratyphoid fever is four times less common than typhoid fever and symptoms are usually less severe with fewer complications.²⁻⁴ Bowel perforation secondary to *Salmonella paratyphi* A and B infection has been recognised for more than half a century,⁵ however, it is rarely reported in comparison with *Salmonella typhi* infection and papers in the Western literature are minimal.⁶ The role of foreign travel as a source of cases of typhoid fever in developed nations is well recognised,⁷ and increasing global travel may lead to a rise in cases of enteric fever. We present a case of small bowel perforation secondary to *S paratyphi* A infection in Bradford, UK, and believe it is an important life-threatening differential to consider in patients with a history of recent travel.

CASE PRESENTATION

A patient of Pakistani-origin was admitted to Bradford Royal Infirmary, UK, with a 3-week history of cough, headache, chills and general malaise. He was diagnosed with Swine flu and treated with TamiFlu in the community 10 days prior to admission but symptoms failed to resolve. The patient subsequently had a 1-week history of episodes of diarrhoea, vomiting and lower abdominal pain. He had returned from a 10-week holiday to Pakistan, 4 weeks prior to admission. There were no concomitant diseases.

On examination, he had a sinus tachycardia of 151, blood pressure of 142/76 and a temperature of 38.7°C. There were no other abnormalities on cardiovascular and respiratory examination, and the abdomen was soft, but tender in the lower abdomen. On the second day, lower abdominal pain persisted but the abdomen remained soft, and the patient was referred for surgical review. A CT scan demonstrated a possible perforated

hollow viscus, however the site was not clear, and there was only a small volume of free fluid in the abdomen. White cell count was $14.16 \times 10^9/l$ and C reactive protein was greater than 160 mg/l. Blood and faecal cultures isolated *S paratyphi* A. On the third morning, the patient had a sinus tachycardia of 135, a temperature of 40°C and generalised peritonitis.

INVESTIGATIONS

- ▶ White cell count – $14.16 \times 10^9/l$
- ▶ C reactive protein – >160 mg/l
- ▶ Peripheral blood cultures – *S paratyphi* A
- ▶ Chest x-ray – normal
- ▶ Lymphoid tissue sent for alcohol and acid fast bacilli (Aafb) – not seen on microscopy and not cultured.

Histopathology report

Macroscopic – Serosal surface shows granularity and congestion of variable density with plaque-like exudates. The mucosal surface is oedematous with multiple discrete punched out irregular mucosal ulcers, the largest 2 cm in diameter. Some full thickness mucosal ulceration is evident.

Microscopic – Organising fibrinopurulent serosal surface is noted. Patchy mucosal ulceration with confluent serpiginous submucosal abscess formation and degenerative inflammatory change/necrosis is present in overlying muscularis propria. Occasional foci are noted in relation to residual lymphoid aggregates. No evidence of tuberculous infection, dysplasia or malignancy.

The pattern of ulceration is consistent with enteric fever secondary to typhoid/paratyphoid.

DIFFERENTIAL DIAGNOSIS

- ▶ Tuberculosis
- ▶ Crohn's disease
- ▶ Appendicitis
- ▶ Other infective cause – *S paratyphi*.

TREATMENT

The patient was taken to theatre for laparotomy and a single small bowel perforation was identified one foot proximal to the ileocaecal valve. A loop of small bowel was stuck down in the pelvis at the antimesenteric border, with minimal small bowel contamination. Approximately 20 cm of small bowel was resected and the mesenteric vessels ligated with 2-0 vicryl. A side to side (functional end to end) stapled anastomosis was performed. The abdomen was washed out with 1 l of normal saline and closed.

OUTCOME AND FOLLOW-UP

Histopathology demonstrated ulceration consistent with *S paratyphi* infection. Intravenous cefuroxime and metronidazole were commenced for 10 days and followed by 4 days of oral ciprofloxacin and metronidazole. As advised by microbiology, a 10-day course of flucloxacillin was prescribed on the eighth day postoperatively for a wound infection, although positive cultures were not identified. The patient was discharged on the following day.

DISCUSSION

This case report highlights the increasingly diverse pathology presenting in developed nations, in particular in areas of high immigration and foreign travel. Literature on small bowel perforation secondary to *S paratyphi* infection is scarce and no recent cases have been reported.⁵ As trends change in global travel, the incidence of *S paratyphi* infection in developed nations may increase. Its presentation can be non-specific and in this case was initially interpreted as Swine flu. There is a need for greater awareness of small bowel perforation as a life-threatening complication of *S paratyphi* A infection.

Learning points

- ▶ *S paratyphi* infection may increase because of changing trends in global travel.
- ▶ Severe complications of *S paratyphi* infection such as small bowel perforation may occur.
- ▶ Small bowel resection and side to side anastomosis is an effective technique.

Competing interests None.

Patient consent Not obtained.

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