

## Case 41

A 23-year-old female architecture student presented to the emergency department with a 2-week history of bloody diarrhoea and abdominal discomfort, but no pain. She had returned from a field trip with colleagues in India a month previously, but her colleagues had remained well. She reported passing up to 10 loose bowel motions per day with bleeding, and had several episodes of nocturnal diarrhoea. She was a vegetarian and her only medical history was presumed infectious diarrhoea 3 years previously. Her cousin had Crohn's disease, but there was no illness in immediate family members.

On examination, she appeared dehydrated and had a temperature of 38.2°C, with a tachycardia (pulse 104bpm) and blood pressure 90/50mmHg. There was no abdominal distension, but there was mild generalized tenderness.

### Investigations showed:

- Hb 12.5g/L, WCC  $14.5 \times 10^9/L$ , platelets  $600 \times 10^9/L$
- Na 130mmol/L, K 3.2mmol/L, creatinine 75µmol/L, urea 15mmol/L
- ESR 65mm/hour
- CRP 87mg/L
- Plain abdominal radiograph as shown in Fig. 41.1.

## Questions

- 41a) What is the differential diagnosis?
- 41b) What treatment should be instituted?
- 41c) What investigations should be carried out?
- 41d) There was a limited response to treatment after 3 days; the patient still had eight bloody bowel motions per day and a CRP of 50mg/L, although she was afebrile and had a pulse rate of 72bpm. How does this change management?
- 41e) What is the natural history of this condition?



**Fig. 41.1**

## Answers

### 41a) What is the differential diagnosis?

Given the acute history, the major differential diagnosis is between **infective colitis** and **acute severe ulcerative colitis**. Crohn's colitis is unlikely, since it usually causes diarrhoea, severe abdominal pain, and weight loss, but not bloody diarrhoea. The most common organisms causing **infective colitis** with bloody diarrhoea are *Shigella* spp, *Campylobacter* spp, *Entamoeba histolytica*, *Escherichia coli* 0157 H7, *Clostridium difficile*, and *Yersinia* spp. *Salmonella* spp and *Giardia lamblia* do *not* cause bloody diarrhoea. Clinical clues for an infective cause are the recent onset and travel to India. None of her contacts, however, had diarrhoea, and she had little abdominal pain, which characterizes *Campylobacter* and *Shigella* spp. **Amoebiasis** is certainly possible. A history of travel to an endemic area and fever should raise suspicion. *E. coli* and *C. difficile* are much less likely in the absence of a recent history of eating meat from a questionable source, or antibiotic therapy. This patient also fits the criteria for **acute severe ulcerative colitis**, which is defined by the Truelove and Witts' criteria of  $\geq 6$  bloody bowel motions per day plus one or more of the following: pulse  $>90$ bpm, temperature  $>37.8^{\circ}\text{C}$ ,  $\text{Hb} < 10.5\text{g/dL}$ , or  $\text{ESR} > 30\text{mm/hour}$ .

### 41b) What treatment should be instituted?

Treatment must cover BOTH **infective colitis** and **acute severe colitis**. It is better to treat both rather than either alone, and it is potentially dangerous to treat for infection alone while awaiting other investigations. Intravenous corticosteroids will not put the patient at risk if the diagnosis turns out to be infection. An appropriate treatment regimen would be:

- Intravenous hydrocortisone 100mg four times/day
- **Rectal hydrocortisone** 100mg in 100ml 0.9% saline twice daily
- **Subcutaneous heparin** once daily to reduce the chance of the patient developing a deep venous thrombosis
- **3L of fluid/day** (2L 0.9% saline and 1L 5% dextrose), with 60–80mmol KCl/day. Such patients always become hypokalaemic
- **Antibiotics** to cover the possibility of infective colitis, because this is the first attack and there has been recent overseas travel: intravenous metronidazole 500mg three times/day and oral ciprofloxacin 500mg twice daily are appropriate, although antibiotics do not alter the outcome of acute severe inflammatory colitis

- Ask the nurses to **monitor stool frequency** and the pulse and temperature four times/day. This helps objective decision-making
- If **pain relief** is needed in acute colitis, it may indicate impending perforation. It is best to avoid opioids and hyoscine butyl bromide (Buscopan) because these can promote dilatation, and avoid NSAIDS since these can exacerbate colitis. Paracetamol is safe. If pain persists, the plain abdominal radiograph should be repeated that day.

41c) **What investigations should be carried out?**

The following investigations should be carried out on admission.

**Abdominal radiograph** is required in any patient with diarrhoea severe enough to need admission. The mucosal appearance of the colon looks oedematous in acute colitis (unlike the crisp outline to the haustral folds in a normal colon), the wall is thickened, and mucosal islands may be present, which indicate residual rests of mucosa surrounded by ulceration. The colon may also be dilated ( $>5.5\text{cm}$ ), which then represents toxic megacolon that needs urgent specialist gastroenterology and surgical opinions (see Case 22).

**Three stool cultures** for *C. difficile* toxin assay, microscopy culture and sensitivity, and ova cysts and parasites are required. With the current history of travel to India, it is advisable to send a hot stool to the laboratory for immediate microscopy to exclude amoebic colitis.

**Monitor blood tests:** FBC, U&E daily and a CRP on days 3 and 5 are required. Repeat the abdominal radiograph after 24hr if there is established or incipient colonic dilatation (diameter  $>5.5\text{cm}$ ).

41d) **There was a limited response to treatment after 3 days. The patient still had eight bloody bowel motions per day and a CRP of 50mg/L, although she was afebrile and had a pulse rate of 72bpm. How does this change management?**

The patient has had a poor response to intensive treatment. This is defined on day 3 of intensive treatment as a stool frequency  $>8/\text{day}$ , or a CRP  $>45\text{mg/L}$ , and frequency 3–8/day. This is associated with a high risk (85%) of colectomy on that admission. Treatment needs to be changed as a consequence and specialist advice sought urgently. Options for medical rescue therapy include intravenous ciclosporin 2mg/kg once daily (if serum cholesterol  $>3\text{mmol/L}$  and magnesium  $>0.5\text{mmol/L}$ ) OR infliximab 5mg/kg infusion. This is a specialist decision, but should not be delayed: if local advice is unavailable, a regional specialist should be contacted. Contingency plans in case surgery is necessary should also be started: better to introduce a surgeon (as ‘probably unnecessary’) at this



**Fig. 41.1** Abdominal radiograph in acute severe colitis showing oedematous colonic mucosa without visible haustra and a thickened wall (arrow). The absence of any faecal residue is consistent with a pancolitis. The colonic diameter is 4.5cm.

stage, than a day or two later (as ‘unfortunately essential’). This is one of the reasons for specialist input. This patient was given infliximab (5mg/kg infusion) and responded well.

#### 41e) What is the natural history of this condition?

Improvement in the management of acute severe ulcerative colitis has improved mortality from severe attacks of ulcerative colitis from 75% in 1933, 24% in 1955 to <1% in specialist centres today. This can be attributed to intravenous corticosteroids and early surgery for lack of response. Nevertheless, the colectomy rate for acute severe colitis (29%) has remained stable over the past 30 years. Ciclosporin or infliximab appear to defer, rather than prevent colectomy, although further trials are in progress.

### Further reading

- Brown S, George B, Blakeborough A, Haboubi N, Travis SPL (2008). ACPGBI Position statement on the management of acute severe colitis. *Colorectal Dis*; **10**(Suppl 3): 8–29.
- Stange EF, Travis SPL, Vermeire S *et al.* for the European Crohn’s and Colitis Organisation (ECCO) (2008). European Consensus on the diagnosis and management of ulcerative colitis: definitions and diagnosis. *J Crohn’s & Colitis*; **2**: 1–4.
- Jacobovits S, Travis SPL (2006). The management of acute severe colitis. *Br Med Bull*; **75–76**: 131–44.

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