CASE REPORT

Enterocolitis without diarrhoea in an adult patient: a clinical dilemma

Gaurang Nandkishor Vaidya,¹ Amit Sharma,¹ Arman Khorasani-Zadeh,¹ Savio John²¹Department of Internal Medicine, SUNY Upstate Medical University, Syracuse, New York, USA²Department of Gastroenterology, SUNY Upstate Medical University, Syracuse, New York, USA**Correspondence to**Dr Gaurang Nandkishor Vaidya,
gaurang2489@gmail.com;
vaidyag@upstate.edu

Accepted 3 February 2014

SUMMARY

Campylobacter jejuni is one of the most common causes of bloody diarrhoea in the USA. We report a case of a young woman who presented with a clinical picture reminiscent of acute appendicitis. Ultrasonography and CT of the abdomen performed subsequently revealed evidence of colitis. Quite unexpectedly, she had no symptoms of diarrhoea and the stool Gram stain and culture were negative. Nevertheless, due to high clinical suspicion of infectious colitis, appendectomy was deferred. Blood culture was later reported positive for *Campylobacter* species and the patient responded to quinolones. With this case report we try to highlight one of the unusual presentations of *C jejuni* infection, closely mimicking acute appendicitis in the absence of classical symptoms of bacterial enteritis. In such cases, a high index of suspicion, astute history taking skills and the proper use of imaging studies can save the patient from the surgical knife.

BACKGROUND

When a young person presents with periumbilical pain radiating to the right lower quadrant, acute appendicitis always runs high on the differential. The picture is often confounded if the usual symptoms of ileocolitis such as diarrhoea are absent. In clinical practice, it is necessary to be aware of how some cases of ileocolitis can closely resemble acute appendicitis.¹

Campylobacter jejuni ileocolitis usually presents with abdominal pain accompanied by diarrhoea preceded by non-specific prodromal symptoms of nausea and malaise^{1 2} but our case was unusual with a complete lack of diarrhoea, close resemblance to acute appendicitis and negative preliminary infectious workup including negative faecal culture. Our case presented a diagnostic dilemma regarding the future course of treatment. Blood culture, although usually of little use in the diagnosis of enteritis,^{1 2} confirmed the diagnosis in our case.

CASE PRESENTATION

A 19-year-old woman presented with dull, crampy mid-abdominal pain radiating to the right lower quadrant of her abdomen for the past 1 day. She denied systemic symptoms such as nausea, vomiting, diarrhoea or chills. She lived in a dormitory, cooked her own food and denied eating out. She also denied any history of travel outside the USA, sick contacts or evidence of food-poisoning in the community. Her medical history was negative for inflammatory bowel disease or endometriosis. On examination, she was febrile at 38.8°C with the right lower quadrant tenderness without rebound tenderness or local guarding. Rectal examination showed solid, well-formed stools in the rectal vault without any blood. Rest of the examination was unremarkable.

Figure 1 Thickening of ascending colonic wall (green arrow).

CrossMark

To cite: Vaidya GN, Sharma A, Khorasani-Zadeh A, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-202198

INVESTIGATIONS

Her laboratory reports at presentation showed leucocytosis with white cell count (WCC) of $14.3 \times 10^3/\mu\text{L}$, and neutrophilia (91%) on differential. Urine pregnancy test was negative. Stool Gram stain showed 2+ WCCs (>25 WCCs/low power field) but no organisms were identified. Stool culture also failed to show any growth. C reactive protein (CRP) level was elevated at 19.3 mg/L, suggestive of systemic inflammation. Urinalysis was unremarkable.

Ultrasound of the abdomen could not visualise the appendix, and was negative for ovarian torsion or ectopic pregnancy. A CT scan of the abdomen showed no evidence of appendicitis or diverticulitis but was positive for colitis involving the ascending colon extending to the splenic flexure with associated thickening of the terminal ileum (figure 1). Also noted were scattered sub-centimetre lymph nodes along the mesentery of the mesocolon, likely reactive in nature (figure 2).

DIFFERENTIAL DIAGNOSIS

Imaging results, thus, suggested infective ileocolitis likely, though acute appendicitis was not ruled out. Moreover, the initial laboratory results were non-specific for inflammation versus an infectious aetiology (leucocytosis, leucocytes in stools and positive CRP) but no definitive infective source was identified in the preliminary workup-negative stool Gram stain and culture and negative urinalysis; blood culture was pending. The presentation was atypical for ileocolitis but the dilemma about the further course of action was sorted by the knowledge that it can mimic acute appendicitis. So instead of subjecting her through a possibly futile surgery, it was decided to stick to the more suggestive diagnosis of infectious ileocolitis.

Ultrasound of the abdomen showed no evidence of ovarian torsion, uterine or ectopic pregnancy further cemented by the negative pregnancy test. The CT scan of the abdomen showed no evidence of Meckel's diverticulitis or any adnexal disease.

TREATMENT

The patient was empirically managed with oral ciprofloxacin with good improvement of symptoms and normalisation of serum WCC ($8.4 \times 10^3/\mu\text{L}$) in 2 days with neutrophilia dropping to 70%.

Figure 2 Subcentimetre mesenteric lymphadenitis (white arrow).

OUTCOME AND FOLLOW-UP

The patient was eventually discharged home on a 14-day course of oral ciprofloxacin.

Blood cultures were positive for organisms suggestive of *Campylobacter* species, 5 days after her initial presentation. On her follow-up appointment, 2 weeks later, she reported resolution of symptoms.

DISCUSSION

Campylobacter infection is one of the leading causes of food-borne infections reported in USA.³ Outbreaks have been reported to be caused by unpasteurised milk, undercooked meat, especially poultry, or even contaminated water.¹ Our patient reported living in a dormitory and cooking her own food, predominantly consisting of meat, which could have been the source of infection.

The usual course of presentation of *C jejuni* infection includes prodromal symptoms such as nausea, malaise and anorexia lasting for a day followed by colicky abdominal pain and diarrhoea with or without blood in stools.⁴ Abdominal pain is occasionally described as periumbilical in location and cramping type which can radiate to the right lower quadrant, thereby mimicking acute appendicitis.¹

Diarrhoea is a common accompaniment in *Campylobacter* infection⁵ reported in up to 100% of patients.² Our patient had a complete absence of diarrhoea at presentation. Absence of diarrhoea in patients with *Campylobacter* infection has been reported in the past,^{4 6} though it is very rare in adult patients and is extremely under-reported. This can present as a significant dilemma in clinical practice, often culminating in surgery.⁴ Surgery not only subjects the patient to significant morbidity but also delays the appropriate treatment. Though the infection with *C jejuni* can often be self-limiting, the early detection and treatment of the infection is necessary to avoid long-term sequelae like reactive arthritis or Guillain-Barre syndrome.

The diagnosis of infectious colitis can be rapidly established through faecal Gram stain, dark-field or phase-contrast microscopy, later confirmed via faecal culture.¹ Mshana *et al*,⁷ in their study of 226 stool specimens obtained from children with acute diarrhoea, reported the sensitivity of faecal Gram stain in *Campylobacter* infection to be $>75\%$. They also reported a positive correlation between the presence of leucocytes in stools and *Campylobacter* infection.⁷ Faecal cultures, on the one hand, are often unreliable in the absence of diarrhoea due to high false-negative rates and considerable delay in procurement of a stool sample.⁸ The negative faecal Gram stain and culture in our patient was at least partly related to this absence of diarrhea, and indicated a lack of shedding of the organism in the stools. On the other hand, the presence of WCCs in the stools indicated active invasion of *C jejuni* into the intestinal mucosa.⁷ Bacteraemia is not a common finding in *Campylobacter* infection^{1 2} and blood cultures are not useful in establishing diagnosis due to the delay in reporting.

The rate of unnecessary appendectomies in patients with ileocolitis is very high and various modalities have been suggested in the past for making the distinction, from graded compression ultrasound⁵ to CT scans. Ultrasonography is the primary modality for this purpose with a sensitivity $>80\%$ and specificity of $>90\%$.⁹ In addition, CT scan helps in improving the sensitivity even further. The inability to visualise appendix and evidence of mesenteric lymphadenopathy would tip the balance towards infectious ileocolitis.¹⁰

Learning points

- It is not unusual for infectious ileocolitis to mimic acute appendicitis and present in the absence of diarrhoea.
- The number of appendectomies carried out in patients actually with *Campylobacter jejuni* infection is quite large.^{4 5}
- A high clinical suspicion and proper use of imaging modalities to confirm the diagnosis of acute appendicitis are imperative to avoid subjecting the patient to the morbidity associated with unnecessary surgeries.^{6 8 11}

Contributors GNV participated in conception, analysis and interpretation and final approval of the manuscript. AS and SJ participated in critical analysis, editing and final approval of the manuscript. AK-Z participated in critical review and editing and final approval of the manuscript.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Blaser MJ. Epidemiologic and clinical features of *Campylobacter jejuni* infections. *J Infect Dis* 1997;176(Suppl 2):S103–5.
- 2 Peterson MC. Clinical aspects of *Campylobacter jejuni* infections in adults. *West J Med* 1994;161:148–52.
- 3 Altekruze SF, Stern NJ, Fields PI, *et al.* *Campylobacter jejuni*—an emerging foodborne pathogen. *Emerg Infect Dis* 1999;5:28–35.
- 4 Sellu DP. *Campylobacter enterocolitis*: general and surgical aspects. *Postgrad Med J* 1986;62:719–26.
- 5 Puylaert JB, Lalisang RJ, van der Werf SD, *et al.* *Campylobacter* ileocolitis mimicking acute appendicitis: differentiation with graded-compression US. *Radiology* 1988;166:737–40.
- 6 Puylaert JB, Vermeijden RJ, van der Werf SD, *et al.* Incidence and sonographic diagnosis of bacterial ileocaecitis masquerading as appendicitis. *Lancet* 1989;2:84–6.
- 7 Mshana SE, Joloba ML, Kakooza A, *et al.* Role of microscopic examination of stool specimens in the diagnosis of *campylobacter* infection from children with acute diarrhoea in Kampala, Uganda. *Tanzan J Health Res* 2010;12:100–3.
- 8 Seelen JL, Puylaert JB. Bacterial ileoceitis: a “new” disease. *Ultraschall Med* 1991;12:269–71.
- 9 Kaiser S, Frenckner B, Jorulf HK. Suspected appendicitis in children: US and CT—a prospective randomized study. *Radiology* 2002;223:633–8.
- 10 Raposo Rodriguez L, Anes Gonzalez G, Garcia Hernandez JB, *et al.* Usefulness of ultrasonography in children with right iliac fossa pain. *Radiologia* 2012;54:137–48.
- 11 Tarantino L, Giorgio A, de Stefano G, *et al.* Acute appendicitis mimicking infectious enteritis: diagnostic value of sonography. *J Ultrasound Med* 2003;22:945–50.

Copyright 2014 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow