CASE REPORT

Cytomegalovirus-induced colonic stricture presenting as acute intestinal obstruction in an immunocompetent adult

B V Dinesh, Karthikeyan Selvaraju, Sampath Kumar, Sumath Thota

Department of General Surgery, Kasturba Medical College, Manipal, Karnataka, India

Correspondence to

Dr Karthikeyan Selvaraju, drkarthikselvam@yahoo.com

SUMMARY

Cytomegalovirus (CMV) infection causes significant morbidity and mortality in immunopromised patients. Though it is usually silent in immunocompetent adults, rarely it can cause serious life-threatening complications. Gastrointestinal tract is one of the commonly involved organs, where it produces a spectrum of clinical manifestation ranging from mild non-specific abdominal pain and diarrhoea to severe infection with toxic megacolon and death. We present a 65-year-old immunocompetent male patient admitted with acute colonic obstruction secondary to CMV-induced colonic stricture, highlighting the importance of considering it as a differential diagnosis for colonic obstruction and reviewing its management.

BACKGROUND

Gastrointestinal cytomegalovirus (CMV) infection can have serious morbidity and mortality and it occurs as an opportunistic infection in immunocompromised patients. Fortunately, it is very rare in immunocompetent patient where it is usually mild and self-limiting. But it rarely induces serious complications in an immunocompetent adult. To our knowledge this is the first case of CMV-induced colonic stricture presenting as acute intestinal obstruction in an immunocompetent adult, highlighting that it should be considered as a possible differential diagnosis in a patient with colonic stricture.

CASE PRESENTATION

This is a case of a 65-year old male patient presenting in the emergency room with colicky pain in left lower part of the abdomen of 12 days duration, which gradually progressed in intensity with history of passing watery stool in small amounts. But a week later the colicky abdominal pain had increased in intensity along with abdominal distension, bilious vomiting and constipation. But the patient did not report blood in stools, fever or mass per abdomen. There was no history of similar symptoms or previous hospitalisation in the past. On admission, the patient was dehydrated with tachycardia (heart rate 110 bpm). His blood pressure was 130/90 mm Hg and his abdomen was distended with visible peristalsis and mild tenderness on the left iliac fossa. There were no signs of peritonitis or mass palpable and the rest of the examination was unremarkable.

INVESTIGATIONS

Blood investigations including blood picture, electrolytes, blood sugar and renal and liver function test were normal except for haemoconcentration. Serology for HIV was negative and there was no evidence of immunosuppression. Abdominal radiography showed dilated small and large bowel with multiple air fluid level suggestive of intestinal obstruction (figure 1). A contrast-enhanced CT of the abdomen showed dilation of ileal loops, ascending colon, transverse colon and proximal descending colon with circumferentially enhancing short segment stricture at the descending colon—sigmoid colon junction (figure 2). A sigmoidoscopy showed ulcerated strictures lesion in the sigmoid colon and scope could not be negotiated beyond the strictures lesion (figure 3). An endoscopic biopsy of the lesion showed tubular colonic glands surrounded by oedematous lamina with lymphoplasmacytic and focal neutrophilic infiltrate with no evidence of malignancy or granuloma.

TREATMENT

The patient was electively taken up for the exploratory laparotomy where the strictures descending colon sigmoid colon junction was removed and primary end to end anastomosis of descending colon to rectum was performed.

OUTCOME AND FOLLOW-UP

The postoperative period was uneventful. Histopathology of the specimen revealed an ulcer of

Figure 1 Plain abdominal radiography showing dilated small and large bowel with multiple air fluid level.

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Figure 2 Contrast-enhanced CT abdomen and pelvis showing circumferentially enhancing short-segment stricture at the descending colon—sigmoid colon junction (arrow).

colonic mucosa and submucosa with focal extension up to the muscularis covered with cell debris and inflammatory cells. An occasional endothelial cell and stromal cells shows intranuclear eosinophilic inclusion suggestive of CMV (figure 4). Since there is no evident of immunosuppression and as the patient improved symptomatically in the postoperative period he was not started on antiviral therapy for CMV.

Figure 3 Sigmoidoscopy showing the stricturous lesion in the sigmoid colon.

Figure 4 Intranuclear eosinophilic inclusion (arrow) suggestive of cytomegalovirus (H&E, $\times 200$).

DISCUSSION

CMV is a member of the β -herpesvirus group and spreads predominantly by sexual transmission but also by vertical transmission from infected mother to fetus, a blood transfusion, an organ transplantation and repeated or prolonged intimate contact. Once infected, an individual carries CMV for life but the infection usually remains latent. Seroprevalence for CMV worldwide ranges from 60% to 100%.¹ But when T-lymphocyte-mediated immunity is compromised, CMV reactivation syndrome develops frequently. CMV infection in an adult is either a reactivation of latent infection or acquisition of primary CMV infection.

Among the patients with severe CMV infection, gastrointestinal tract (colitis) and the central nervous system (meningitis, encephalitis and transverse myelitis) were the most frequent systems involved.² Gastrointestinal involvement with CMV may be localised or extensive and includes colitis with diarrhoea,³ oesophagitis,⁴ gastritis,⁵ ileitis,⁶ pseudotumor of the colon.⁷ Typical CMV lesions initially appear as serpiginous ulcers which coalesce to form giant ulcers.

The most frequently affected site in the gastrointestinal tract in immunocompetent patients is the colon and rectum.² While CMV colitis is almost always secondary to the reactivation of latent infection in immunosuppressed patients, CMV colitis in the immunocompetent host can occur in the setting of primary infection. Complications of CMV colitis include massive haemorrhage, toxic megacolon,⁸ perforation⁹ and protracted inflammatory bowel disease.^{10 11} Colonic and ileal stricture have been reported in infants and neonates^{12 13} especially colonic stricture mimicking Hirschsprung disease have been reported in infants.¹⁴ Factors associated with poor prognosis are advanced age, male gender, the presence of immune-modulating comorbidities and a need for surgical intervention.¹⁵

Tough ganciclovir and foscarnet are used in the treatment of CMV infection in immunocompromised patients; the need for specific antiviral treatment in immunocompetent patients with severe CMV infection is controversial.² In immunocompetent patients, the presumed benefit of specific antiviral treatment in severe cases of CMV infection should be weighed against the potential toxicity of therapy. Ganciclovir can cause myelosuppression, central nervous system disorders, hepatotoxicity, irreversible infertility or teratogenesis, whereas foscarnet can cause disturbances in mineral and electrolyte imbalance, as well as nephrotoxicity. Long-term administration of these agents may lead to the emergence of resistant viral strains.

In summary, we would like to highlight that CMV infection can present with acute intestinal obstruction and it should be considered as a differential diagnosis of colonic stricture even in immunocompetent adult.

Learning points

- ▶ Cytomegalovirus infection can present with acute intestinal obstruction.
- ▶ It should be considered as a differential diagnosis of colonic stricture even in immunocompetent adult.
- ▶ Surgical resection of the stricture with or without adjuvant antiviral therapy will be treatment of choice.

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Patient consent Obtained.

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