

Cytomegalovirus causing acute colonic pseudo-obstruction in a renal transplant recipient

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Summary

A female patient presented with pyrexia and features of large intestinal obstruction, 10 weeks posttransplantation, with biopsy-proven colitis caused by cytomegalovirus (CMV) and positive CMV antigenaemia and IgM tests. The symptoms resolved after treatment with ganciclovir, nasogastric aspiration and intravenous fluid replacement.

Keywords: cytomegalovirus, acute colonic pseudo-obstruction, ganciclovir

Cytomegalovirus (CMV) is a major cause of infectious complication following renal transplantation leading to CMV disease syndrome manifested as pyrexia, leucopenia, pneumonitis, hepatitis, gastrointestinal involvement, retinitis, encephalitis and allograft dysfunction. CMV also predisposes to bacterial, viral and fungal superinfections as a result of its immunosuppressive effect, thereby adversely affecting the graft and patient survival.¹ We report the management of a renal transplant recipient who presented with acute colonic pseudo-obstruction in the presence of biopsy-proven CMV disease.

Case report

A 69-year-old woman was admitted, 10 weeks post-renal transplantation, with generalised colicky abdominal pain, diarrhoea, low-grade pyrexia and weight loss. Physical examination showed mild dehydration, generalised abdominal distension with mild tenderness, normal bowel sounds and an empty rectum. Plain

abdominal X-ray showed a generalised colonic distension. Sigmoidoscopy revealed an inflamed rectum and sigmoid colon and a biopsy of the latter showed cytopathic effects consisting of intranuclear inclusions surrounded by a distinct halo characteristic of CMV infection (figure 1). The diagnosis of CMV infection was further confirmed by CMV antigenaemia assay by immunoperoxidase test on buffy coat cell preparation and a positive anti-CMV IgM. Conservative treatment with ganciclovir (5 mg/kg body weight twice daily intravenously), nasogastric aspiration and intravenous infusions led to complete resolution of symptoms.

Discussion

Acute colonic pseudo-obstruction is a clinical condition with the symptoms, signs and radiological appearance of large bowel obstruction, but without any apparent mechanical cause. In 1948, Ogilvie described this condition as a functional obstruction, although the term intestinal pseudo-obstruction was introduced by Dudley and co-workers in Edinburgh a decade later, and both are being used synonymously now.²

In more than 80% of cases acute colonic pseudo-obstruction is a complication of other clinical conditions, such as intra-abdominal sepsis and chest infections following major pelvic and hip surgery, including renal transplantation, major trauma, retroperitoneal malignancy, metabolic disturbances such as in renal and hepatic failure, major acute cardiovascular diseases like myocardial infarction and mesenteric ischaemia, and drugs such as phenothiazines, antidepressants, opiates and antiparkinsonians. However, in a few patients, it occurs in isolation and is therefore truly idiopathic.²

CMV is a recognised agent which may infect any part of gastrointestinal tract in renal transplant recipients causing ulceration, which may lead to symptoms such as anorexia, abdominal pain, odynophagia, vomiting, diarrhoea or may be complicated with haemorrhage or perforation.³ Intestinal pseudo-obstruction secondary to CMV infection of myenteric plexus has been described previously in a two-month-old immunocompetent boy who presented with dehydration, diarrhoea and abdominal distension with normal barium enema and positive anti-CMV antibody and viruria.⁴ Press *et al* reported for the first time a case of CMV infection of the myenteric plexus in a 18-year-old renal transplant recipient who

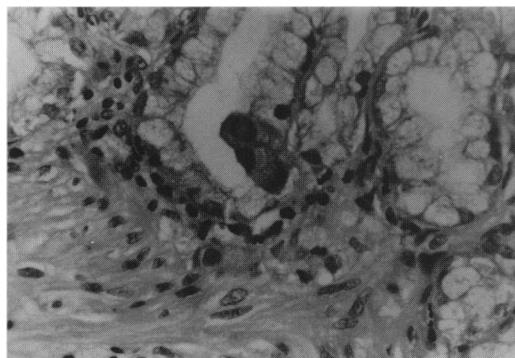


Figure Section of sigmoid colon showing cytopathic effect of CMV

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Acute colonic pseudo-obstruction: features

- acute large bowel obstruction
- ill patients
- massive abdominal distension
- primary aetiology obvious in 80% of cases
- perforation of caecum
- high mortality

Box 1

had died of massive gastrointestinal haemorrhage from caecal ulcers.⁵ The inhibitory role of sympathetic nerves and the excitatory role of parasympathetic nerves in regulating the mechanical activity of colon is well recognised. Infection of the myenteric plexus would lead to an imbalance in the autonomic innervation of the colon which may be further augmented by the increased sympathetic drive in ill patients leading to acute colonic pseudo-obstruction.⁶

The management of acute colonic pseudo-obstruction in renal transplant recipients should receive special attention as the mortality of colonic bleeding and perforation is as high as 83%.⁷ Investigation should be directed towards identification of all possible contributory factors as described earlier. A contrast enema using a water-soluble agent is helpful in confirming or refuting mechanical obstruction. Conservative management should be instituted initially, including nasogastric decompression,

Learning/summary points

- CMV is a cause of infection of myenteric plexus in renal transplant recipients causing acute colonic pseudo-obstruction
- colonic biopsy, CMV antigenaemia and anti-CMV antibody tests should be a routine in these patients
- conservative treatment with nasogastric aspiration, intravenous fluids and ganciclovir leads to resolution of symptoms

Box 2

correction of fluid and electrolyte abnormalities and treatment of any associated conditions or specific infection such as CMV.

Conservative treatment should be continued for 48–72 hours provided that there is no right iliac fossa tenderness and the caecal diameter is less than 12 cm. Colonoscopic decompression is indicated if there is progressive caecal distension or no improvement is seen with a conservative regimen. The indications for surgery are failure of conservative treatment and colonoscopy, or clinical signs indicating impending or actual caecal perforation. The type of operation is dictated by the viability of caecum; it may be a caecostomy in a viable caecum or a hemicolectomy in the presence of an ischaemic caecum.² Historically, the mortality with CMV disease of the gastrointestinal tract in organ transplant recipients was as high as 83%,⁷ which has reduced to 0% since ganciclovir became available.⁸

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