CASE REPORT

Cytomegalovirus colitis mimicking rectal carcinoma in an immunocompetent elderly woman

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SUMMARY

Cytomegalovirus (CMV) colitis is uncommon in immunocompetent patients, despite a high seroprevalence rate of CMV in the general population. CMV infection has been described in individuals with compromised immune systems: in AIDS, under corticosteroid and immune modulating treatment, with cancer or haematological malignancies. Its most frequent clinical presentation is a necrotising ulcerative form; pseudotumoural CMV colitis has been described as highly exceptional. We report a case of CMV colitis mimicking rectal carcinoma in an immunocompetent elderly woman. The immunosenescence and protein-energy malnutrition increase incidence and severity of infectious diseases in elderly individuals. Immunosenescence may affect all aspects of immunity; severe protein malnutrition modifies mostly cellular immunity, growing susceptibility to infections.

BACKGROUND

Very few cases of acute cytomegalovirus (CMV) rectocolitis in immunocompetent elderly patients have been reported.^{1–3} Moreover, the form of a pseudotumour, as described here, is considerably rarer.⁴ As a result of potential implications in medical practice, clinicians should be aware of such a description.

CASE PRESENTATION

An 88-year-old bedbound woman was admitted with a history of 2 weeks of diarrhoea and diffuse abdominal pain. Her medical history included paroxysmal atrial fibrillation, aortic stenosis, hypertension, renal failure, anaemia and osteoporosis. The vital signs were: a blood pressure below 115 over 80 mm Hg, a heart rate of 80 beats and a respiratory rate of 17 breaths/min. She had a temperature of 38°C. On physical examination, her abdomen was soft and diffusely tender. Rectal examination revealed an irregular rectal mass. The presence of faecal material on vaginal examination suggested the existence of a rectovaginal fistula. An abdominal X-ray showed faecal impaction.

INVESTIGATIONS

Laboratory studies included creatinine of 1.09 mg/dL (normal range 0.7–1.2 mg/dL), a white cell count of 9000 cells/mL (normal range 4000–11 000 cells/mL), haemoglobin of 9.7 g/dL (normal range 12.1–15 g/dL) and C reactive protein of 128 mg/L (normal range 1–10 mg/L). Flow cytometry revealed a normal lymphocyte count of 1.800 cells/mL (normal range 0.800–3.600 cells/mL),

a reduced CD4 count of 0.600 cells/mL (normal range 0.700–1.100 cells/mL), a CD19 count of 0.100 cells/mL (normal range 0.200–0.400 cells/mL) as well as a diminished CD4:CD8 ratio of 0.85. PCR indicated a negative CMV viral load. HIV serology and antigen P24 were negative. An albumin level of 1.9 g/dL (normal range 3.4–4.7 g/dL) suggested severe protein-energy malnutrition. Vitamin B1, B6 and D levels were deficient. Stool cultures as well as a stool ova and parasites examination were negative.

Proctosigmoidoscopy showed an ulcerated pseudopolypoid lesion embracing half the circumference of the anorectal junction. Pelvic MRI confirmed the existence of a rectovaginal fistula situated 13 mm from the anus and, moreover, showed a hemicircumferential lesion of 8 mm×50 mm, comprising the posterior wall of the medium and low rectum, without extension beyond the serous membrane (figures 1 and 2).

Histological examination determined the absence of neoplastic proliferation and revealed acute to subacute ulceration surrounded by hyperplastic epithelium forming a pseudovillous relief, dystrophic glands with hyperplastic epithelium without dysplastic elements and an abundant subepithelial polymorphic inflammatory infiltrate, interrupted by congested capillaries. Some were ectatic and surrounded by endothelial cells showing dystrophic changes with nucleomegaly (figure 3). Given these interstitial abnormalities suggesting CMV infection, an immunohistochemical study was conducted, resulting positive for CMV-associated antigens

Figure 1 Pelvic MRI, sagittal section: lesion of posterior wall of the medium and low rectum.

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Figure 2 Pelvic MRI, axial section: hemicircumferential lesion of the rectum (arrow) and rectovaginal fistula.

(monoclonal antibodies, clone CCH2+DDG9, Dako, reference M 0854) (figure 4).

DIFFERENTIAL DIAGNOSIS

It is important to recognise a necrotising ulcerative form of CMV colitis as differential diagnosis to inflammatory bowel disease, infective colitis from other infective agents, *Clostridium difficile* colitis and ischaemic colitis. Pseudotumoural CMV colitis must be included in the differential diagnosis of tumourous lesions in the colon, even in the immunocompetent.

TREATMENT

Potential therapy could be discussed in the elderly patients with a diagnosis of CMV colitis. Surgical resection has been proposed for this rare kind of pseudotumour and can be efficient if localised.⁵ Limited evidence suggests that antiviral therapy with ganciclovir or valganciclovir (a prodrug of ganciclovir) may be used to manage severe CMV disease in immunocompetent adults. This therapy may benefit elderly patients, particularly those with underlying medical illnesses.^{6,7}

Figure 3 Histological study: cytomegalic cells with nuclear inclusions surrounded by a clear halo ('owl's eye' appearance).

Figure 4 Immunohistochemical study: monoclonal antibody against cytomegalovirus antigen.

When the rectovaginal fistula persists after antiviral treatment and the tissues become uninfamed, surgical repair may be performed.

OUTCOME AND FOLLOW-UP

The patient's clinical course was complicated by aspiration pneumonia leading to her death.

The outcomes are generally good in the clinical course; complete response that uses surgery or targeted antiviral therapy for CMV is well described in the literature. Significant underlying medical illnesses and severe protein-energy malnutrition partially explain the poor outcome in our patient.

DISCUSSION

CMV infections are due to viral reactivation secondary to a decreased cytotoxic T lymphocyte and natural killer cell count, as it occurs in cases of severe immune depression (AIDS, cancer, haematological malignancies, immunosuppressive treatment, chemotherapy, corticotherapy).^{8,9} Very few cases of acute CMV rectocolitis in immunocompetent elderly patients have been reported. In the study by Rafailidis *et al*,⁹ only 60 cases have been included. Even more so, the form of a pseudotumour as described here is extremely rare. The distribution of the lesions across the colon can be segmentary, multifocal or diffuse. Endoscopic presentation is highly variable, ranging from erythematous changes of the mucosa to ulcers or pseudomembranous changes. As in our case, the formation of internal fistulas can complicate the clinical course of CMV colitis.^{4,9} Immunosenesence and protein-energy malnutrition probably play an important role in the reactivation of the virus.¹⁰⁻¹² Immunosenesence may affect all aspects of immunity. A state of malnutrition essentially modifies cellular immunity, as it is associated with a reduced T lymphocyte count (particularly the CD4:CD8 ratio), increasing susceptibility to infections.¹³

The diagnosis of the intestinal forms of CMV colitis is based on an array of clinical, biological, endoscopic and histological features. Our observations underline that diagnosis of CMV colitis should be taken into consideration in all immunocompetent patients presenting with diarrhoea, in whom no infectious agent has been identified after basic workup, as well as in cases of rectitis of pseudotumoural appearance. Nutritional status should be systematically evaluated in older patients.

Learning points

- ▶ Cytomegalovirus (CMV) colitis is uncommon in immunocompetent patients.
- ▶ The necrotising ulcerative form is the most common manifestation of CMV colitis; a pseudotumoural appearance is highly exceptional.
- ▶ Nutritional status should be systematically evaluated in older patients; a state of malnutrition principally modifies cellular immunity, increasing susceptibility to infections.
- ▶ CMV colitis should be taken into the differential diagnosis of intestinal mass lesions including for the immunocompetent.

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