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Lethal Cytomegalovirus Colitis in a Progressive Guillain-Barré Syndrome: A Case Report

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Abstract: ***Cytomegalovirus (CMV) colitis is a significant cause of morbidity in immunocompromised individuals, though it is increasingly recognized in critically ill and immunomodulated patients[1]. Guillain–Barré Syndrome (GBS), an acute demyelinating polyneuropathy, often requires intensive care management and immunotherapy, predisposing patients to opportunistic infections[2]. We report a case of a 68-year-old female with progressive GBS who developed CMV colitis during hospitalization, leading to a fatal outcome despite appropriate antiviral therapy. The patient presented with acute onset ascending weakness, later complicated by abdominal pain and distension. Imaging revealed large bowel dilatation, while colonoscopy and histopathology confirmed CMV colitis with characteristic inclusion bodies[3]. Despite initiation of ganciclovir and supportive therapy, the patient deteriorated and succumbed to refractory shock. This case highlights the importance of early suspicion, timely diagnosis, and aggressive management of CMV infection in critically ill patients with GBS.***

Keywords: Cytomegalovirus colitis, Guillain–Barré syndrome, immunocompromised, ganciclovir, case report

1. Introduction

Cytomegalovirus (CMV) is a ubiquitous herpesvirus that remains latent in the host after primary infection and can reactivate under conditions of immunosuppression[7]. CMV colitis is a well-recognized manifestation, particularly in patients with HIV/AIDS, organ transplant recipients, and those on immunosuppressive therapy[2]. However, it is increasingly being reported in critically ill patients without classical immunocompromised states[1, 5].

Guillain–Barré Syndrome (GBS) is an acute inflammatory demyelinating polyneuropathy characterized by rapidly progressive weakness and areflexia. Management often involves intensive care support and immunomodulatory therapies such as intravenous immunoglobulin (IVIG) or plasmapheresis. These factors, along with prolonged hospitalization, may predispose patients to opportunistic infections including CMV[1].

We present a rare and fatal case of CMV colitis developing in a patient with progressive GBS, emphasizing the diagnostic and therapeutic challenges associated with this condition.

2. Case Presentation

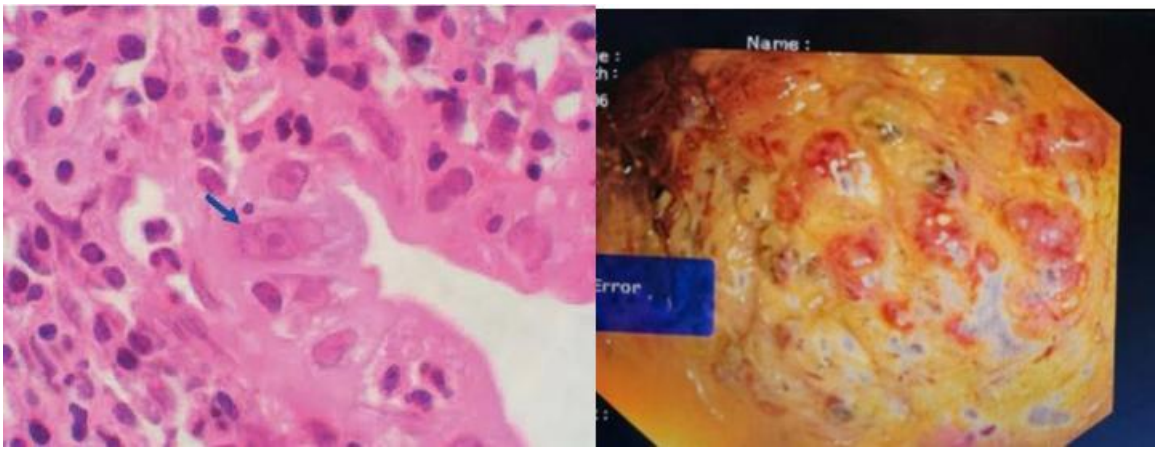
A 68-year-old female presented with complaints of sudden onset bilateral lower limb weakness, which progressively involved the upper limbs over a short duration. She was admitted to the intensive care unit and managed with supportive ICU care. Nerve conduction studies confirmed the diagnosis of Guillain- Barré Syndrome in the evolving stage.

During the course of hospitalization in early phase, the patient developed sudden acute onset colicky abdominal pain associated with abdominal distension. Clinical examination revealed features suggestive of bowel involvement. Digital rectal examination showed blood-stained mucoid stool.

Contrast-enhanced computed tomography (CT) of the abdomen revealed multiple long-segment areas of large bowel dilatation with mild bowel wall thickening involving the distal transverse colon, splenic flexure, and sigmoid colon. The largest bowel diameter measured approximately 7.4 cm at the distal sigmoid colon. Post-rectal contrast study demonstrated contrast limitation at the rectosigmoid junction with proximal bowel dilatation and fecal loading. Minimal pericolic fat stranding was also noted.

Colonoscopic evaluation revealed proliferative thickening of the mucosa involving the descending colon and sigmoid colon. Biopsy samples were obtained from multiple sites. Histopathological examination demonstrated characteristic CMV inclusion bodies ("owl eye" appearance)[3] confirming the diagnosis of CMV colitis.

Ultrasonography of the abdomen showed dilated large bowel loops measuring up to 6.8 cm, filled with fecal matter. Digital subtraction angiography revealed diffuse increased vascularity along the distal branches of the superior and inferior mesenteric arteries, suggestive of mucosal hypervascularity.



3. Treatment

Following confirmation of CMV colitis, the patient was initiated on antiviral therapy with oral ganciclovir 500 mg and mesalamine 400 mg[3]. In view of underlying GBS, she also received intravenous immunoglobulin (IVIG) at a dose of 2 g/kg administered over two days.

Despite appropriate medical management, the patient showed no clinical improvement and progressed to refractory shock. Intensive supportive measures were instituted; however, the patient ultimately succumbed to her illness.

4. Discussion

CMV colitis is traditionally associated with immunocompromised states; however, emerging evidence suggests its occurrence in critically ill patients, including those admitted to intensive care units[1, 5]. Reactivation of latent CMV infection is thought to occur due to immune dysregulation, systemic inflammation, and stress-related immunosuppression[1].

In patients with GBS, several factors contribute to increased susceptibility to infections. These include prolonged immobilization, ICU stay, autonomic dysfunction, and immunomodulatory therapy such as IVIG[2].

Clinical presentation of CMV colitis is variable, ranging from mild abdominal discomfort to severe colitis with bleeding, perforation, or toxic megacolon[2, 4]. In this case, the patient presented with abdominal pain, distension, and blood-stained stool, which are classical but often late manifestations.

Radiological findings such as bowel wall thickening and dilatation are non-specific but help in raising suspicion[3]. Colonoscopy with biopsy remains the gold standard for diagnosis[2]. The presence of characteristic intranuclear inclusion bodies ("owl eye" appearance) on histopathology is diagnostic[3].

Early initiation of antiviral therapy with ganciclovir is crucial and has been shown to reduce morbidity and mortality[2]. However, delayed diagnosis, advanced disease, and underlying critical illness significantly worsen prognosis[4].

Several studies have highlighted the poor outcomes associated with CMV infection in critically ill patients. A study by Rafailidis et al. demonstrated increased mortality in patients with CMV reactivation in ICU settings[1]. Similarly, Indian studies have reported CMV colitis in non-HIV patients with significant morbidity[5, 6].

This case underscores the importance of maintaining a high index of suspicion for CMV colitis in patients with unexplained gastrointestinal symptoms in ICU settings, even in the absence of classical immunosuppression.

5. Conclusion

CMV colitis should be considered as a differential diagnosis in critically ill patients, including those with Guillain–Barré Syndrome, who develop gastrointestinal symptoms. Early diagnosis through endoscopic and histopathological evaluation is essential for timely initiation of antiviral therapy[3]. Despite appropriate treatment, the prognosis remains poor in advanced cases[4], highlighting the need for vigilance and early intervention.

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