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Case Report

Ileal perforation caused by cytomegalovirus in an immunocompetent patient

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ABSTRACT

Cytomegalovirus (CMV) is a subclinical infection that causes catastrophic consequences for patients, specifically those who are immunocompromised. In this article we review a 71-year-old male patient with history of ischemic cardiopathy, he begins with abdominal pain localized in right inferior quadrant. The abdominopelvic CT scan reported an acute complicated appendicitis with pneumoperitoneum. We realized a laparotomy, identifying an ileal perforation. CMV diagnosis was made by histological findings.

Keywords: CMV, Ileal perforation, CMV enteritis

INTRODUCTION

Cytomegalovirus is classified as a double stranded DNA virus, part of the Herpesvirus family.[1] CMV establishes a latent infection therefore the seroprevalence ranges from 47-100% of the adult population.[11] When CMV is reactivated causes a disseminated disease, especially in immunocompromised patients.[1,2]

Gastrointestinal infection caused by this virus in immunocompromised patients is common and causes catastrophic complications, such as bowel perforation due to tissue invasion. The symptoms usually are diarrhea, fever, gastrointestinal bleeding, abdominal pain and bowel perforation in a lesser percentage.[2] The prognosis of bowel perforation is poor, but emergency surgery must be performed.[4]

CASE REPORT

A 71-year-old male patient with history of coronary artery disease is admitted to the emergency room for sudden onset of severe abdominal pain that had developed 72 hours prior to her visit, localized in the right inferior quadrant. He denied history of diarrhea, gastrointestinal bleeding or fever.

On physical examination the patient appeared pale, hypertensive (140/90), 72 of heart rate, non-febrile (36.5º). His abdomen was discretely distended, containing hypoactive small bowl movements, generalized abdominal tenderness and generalized peritonism was also found. Admission laboratory data revealed: hemoglobin (Hb: 11 g/L), white cell count (6.72×10^3 U/L), platelets (194×10^3 U/L), glucose (398 mg/dl), creatinine (0.86), liver enzymes and rest of laboratory findings were inside normal limits.

Ct of the abdomen and pelvis was immediately performed, which demonstrated appendix with pelvic location with a transverse diameter 15 mm, with thickening of the mesenteric stranding and pneumoperitoneum.

An emergency laparotomy was rapidly performed, revealing perforation of the terminal ileum with minimal intra-abdominal contamination. We realized an intestinal resection of 75 cm, due to macroscopic changes in the ileum, and also realized an end-to-end manual

anastomosis, since the perforation was proximal to the ileocecal valve. We started medical treatment posterior to the surgery with meropenem, as well as parenteral nutrition. Patient care was shared between general surgery and geriatrics.

Figure 1 (A and B): Small bowel perforation in the mesenteric side.

Posterior evolution was satisfactory, starting oral intake at the second day post operatively and was discharged at the fifth day.

Figure 2: Resected small bowel, showing the ulceration, which was extensive and perforated.

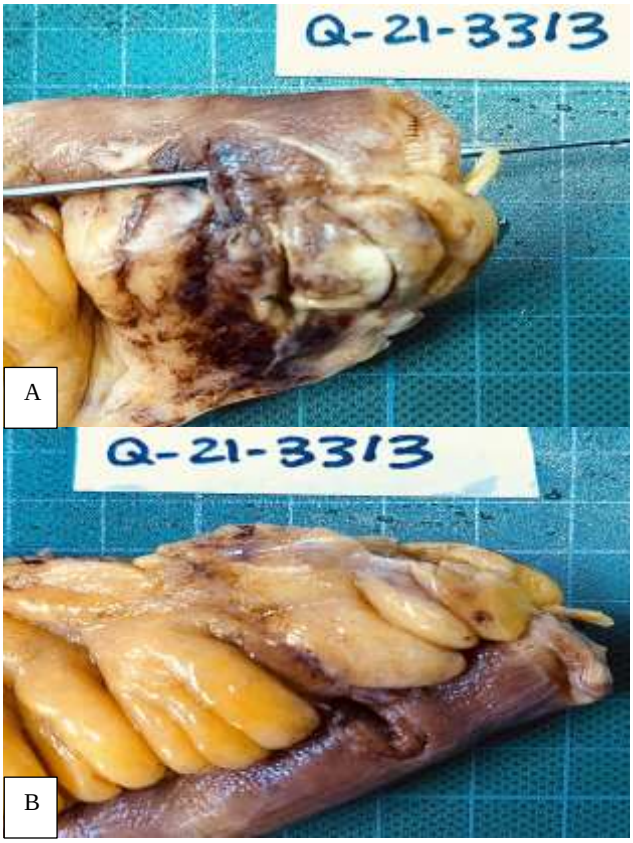

Figure 3 (A and B): Resected small bowel, showing intestinal perforation.

The histologic findings included ileum with intense inflammation, brown mucosa with necrosis and ulcers, also presence of inclusion bodies, typically basophilic intranuclear inclusions.

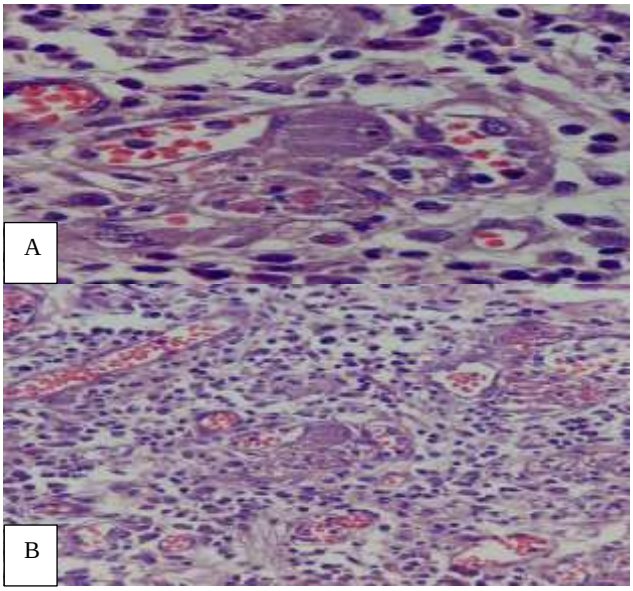

Figure 5 (A and B): Pathological findings of the perforation site (H and E) demonstrated positive nuclear reaction; chronic intense inflammatory infiltrate given by plasmatic cells.

DISCUSSION

CMV has a broad spectrum of illness, diversity depends on the host, patients with AIDS, or with immunosuppression have a high risk for developing fatal outcomes.[4,10] Organs that are usually affected are colon (47%), duodenum (21.7%), esophagus (8.7%), small bowel (4.3%), and stomach (17.4%).[4,11] Gastrointestinal tract infection induces esophagitis, gastritis, duodenitis and enterocolitis, and ulcers are found in endoscopic exams. Perforation is a rare complication, the colon being the most common site of perforation, around 53% of the cases, followed by the ileum in 40% of the cases and finally the appendix in 7% of the cases.[4,7,11] Seroprevalence rates around adult's ranges from between 40-100%.[1]

Clinical manifestations of CMV infection in the gastrointestinal tract include fever, malaise, anorexia, fever, nausea, diarrhea, abdominal pain, ileus, gastrointestinal bleeding, and perforation being the rarest.[2] The diagnosis of CMV enteritis is made by the histological findings, such as CMV inclusions (being the most important evidence), the presence of CMV antigens in peripheral blood leukocytes (detection of more than 4-fold increase in anti-CMV antibody titer and/or CMV specific IgM), and/ or isolation of CMV in cultured biopsy tissue.[2,5]

CMV infection induces ulceration due to the ischemic mucosal injury secondary to the infection of the vascular endothelial cells, this leads to enlarged swollen cells, luminal compromise, fibrin thrombi, local vasculitis, damage to the tissues, and finally peforation.[2,12]

Therapy with ganciclovir is the first line therapy in CMV disease for immunosuppressed patients, however in immunocompetent patients CMV enterocolitis resolves spontaneously after surgical resection without antiviral drugs.[5]

CONCLUSION

In conclusion our patient was saved by the emergency surgery performed, where we resected part of the ileum, even when the prognosis of this complication is poor. CMV infection should be considered as a possible diagnosis in patients with abdominal pain, fever, diarrhea and immunosuppression. Our patient had no risk factors for CMV infection, being our first suspicion Salmonella, since is a more common cause of ileal perforation in Mexico.

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