Abdominal Pain in a Patient with AIDS
(See pages 831–2 for Photo Quiz)

**Figure 1.** Low-power micrograph (original magnification, ×40) of a longitudinal section of the appendix demonstrates mucosa ulcerated with a lymphohistiocytic infiltrate in the lamina propria and submucosa.

**Figure 2.** High-power micrograph (original magnification, ×600) of the appendix specimen shows mucosal cells with characteristic cytomegalovirus inclusions (arrow); note the “owl-eye” intranuclear inclusions and granular cytoplasmic inclusions.

Diagnosis: Cytomegalovirus appendicitis.

The patient presented with symptoms and signs suggesting localized peritonitis. The clinical diagnosis of acute appendicitis prompted surgical intervention. On macroscopic examination, the appendix appeared congested, measuring 6 × 1 × 0.1 cm. Microscopic examination revealed ulcerated mucosa with luminal neutrophils. A lymphohistiocytic infiltrate was visible in the mucosa and submucosa, with preservation of the muscularis propria (figure 1). The inflammatory infiltrate featured many histiocytes and stromal cells containing nuclear and cytoplasmic inclusions characteristic of cytomegalovirus (CMV) infection (figure 2). Subsequent immunostaining confirmed the presence of CMV. Acid-fast staining was negative for mycobacteria. The result of a CMV antigen immunofluorescence (cytospin) assay was positive. The patient was treated with intravenous ganciclovir, and antiretroviral therapy was initiated. His fever resolved with ganciclovir therapy.

HIV infection is frequently complicated by gastrointestinal diseases, which may be caused by a diverse range of infectious agents. CMV colitis presents in association with advanced immunosuppression and is the most significant viral cause of enterocolitis [1]. CMV infections of the gastrointestinal tract commonly affect the esophagus and colon; less commonly affect the pancreas, gallbladder, and biliary tree [2]; and rarely affect the appendix [3–6].

Appendicitis is a common cause of acute abdominal pain, with a lifetime prevalence of 7%. Bacterial appendicitis would, therefore, be expected to occur with a low, but recognizable, frequency among young persons with AIDS. In patients with AIDS, the challenge is evaluating right lower quadrant pain, because the expected leukocytosis may be masked by a relative leukopenia [6]. Ninety percent of persons with AIDS will develop CMV infection during their illness. However, CMV infection involving the appendix has proved surprisingly rare. In 2 published series, only 4 of 28 [7] and 1 of 9 [8] patients with AIDS who underwent laparotomy for presumed appendicitis had CMV appendicitis.

CMV appendicitis in patients with AIDS may present acutely or with a prolonged onset [4,9]. Imaging studies, such as abdominal ultrasonography and CT scanning, have been suggested as adjuncts to the clinical assessment of acute abdominal pain [7]. However, findings of abdominal imaging may be normal in the early stages of disease. Prompt surgical intervention based on clinical judgment is indicated for patients with AIDS in whom acute appendicitis is suspected.
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Kevin Tan,1 Poh Lian Lim,2 Wai Ming Yap,3 and Soo Yong Tan4
1Department of Neurology, National Neuroscience Institute, Departments of 2Infectious Disease and 3Pathology and Laboratory Medicine, Tan Tock Seng Hospital, and 4Department of Pathology, Singapore General Hospital, Singapore

References


Reprints or correspondence: Dr. Poh Lian Lim, Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng, Singapore 308433 (Poh_Lian_Lim@ttsh.com.sg).

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