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รายงานผู้ป่วย

A Case Report

Cytomegalovirus Appendicitis in a Patient with Acquired Immunodeficiency Syndrome

รายงานผู้ป่วย ไส้ติ่งอักเสบ จากเชื้อไวรัส CMV ในผู้ป่วยภูมิคุ้มกันบกพร่อง

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ABSTRACT :

Cytomegalovirus (CMV) infection occurs predominantly in the immunocompromised hosts, especially patients with acquired immune deficiency syndrome (AIDS). Gastrointestinal infection is one of the most common manifestations among these patients. However, the prevalence of CMV appendicitis is extremely rare and had not been reported in Thailand. The differences of clinical presentation and laboratory values between immunocompetent and AIDS patients often result in diagnostic difficulty. We report a patient who had been diagnosed as AIDS with no prior history of CMV infection. The patient presented with abdominal pain at right lower quadrant without leukocytosis. Diagnosis of CMV appendicitis was confirmed by histopathological examination of appendectomy specimen. The problems related to making a pathological diagnosis of CMV appendicitis and lines of therapeutic management are reviewed.

บทคัดย่อ :

โรคติดเชื้อ Cytomegalovirus (CMV) เป็นโรคที่มักพบในผู้ป่วยที่มีภาวะภูมิคุ้มกันบกพร่อง โดยพบว่า ตำแหน่งที่พบบ่อยที่สุด คือที่ระบบทางเดินอาหาร แต่ความชุกของการติดเชื้อ CMV ที่ไส้ติ่งพบได้น้อยมากและยังไม่เคยมีรายงานในประเทศไทย พบว่าอาการแสดงและผลการตรวจเลือดทางห้องปฏิบัติการ ระหว่างผู้ป่วยปกติกับกลุ่มผู้ป่วยที่เป็นโรคเอดส์มีความแตกต่างกัน รายงานนี้ได้นำเสนอผู้ป่วยหนึ่งรายที่ได้รับการวินิจฉัยว่าเป็นโรคเอดส์ โดยไม่มีประวัติการติดเชื้อ CMV มาก่อน ซึ่งผู้ป่วยรายนี้ มาโรงพยาบาลด้วยอาการปวดท้องน้อยด้านขวา ผลการตรวจเลือดไม่พบว่าเม็ดเลือดขาวสูงกว่าปกติ ผู้ป่วยได้รับการวินิจฉัยว่าเป็นโรคไส้ติ่งอักเสบเนื่องจากการติดเชื้อ CMV ซึ่งได้รับการยืนยันจากการตรวจชิ้นเนื้อทางกล้องจุลทรรศน์ นอกจากนี้ รายงานนี้ยังได้อภิปรายปัญหาเกี่ยวกับการวินิจฉัยทางกล้องจุลทรรศน์ รวมไปถึงแผนการรักษา และการพยากรณ์โรคของผู้ป่วย

Introduction

CMV infection is one of the most common opportunistic infections encountered in immunocompromised hosts such as transplant recipients and patients with AIDS[1]. The prevalence rates are ranging from 8% to 45%[2] and in some series have shown that prevalence reaches up to 90% of patients with AIDS will develop CMV infection at some period during their illness[5]. Involvement of almost every organ system has been documented but gastrointestinal CMV infection is the most frequent manifestation in AIDS patients[7]. It has been estimated that 20% of all patients with AIDS will develop gastrointestinal CMV infection[8]. In the gastrointestinal tract, the most frequently affected site is the colon, but other parts including the esophagus, stomach, biliary tree and gallbladder can be involved[3]. Although CMV colitis is frequently seen in AIDS patients, the prevalence of CMV appendicitis is extremely rare. To present knowledge, only 13 such cases have been reported in the English literature[5-8].

Case report

This is a case of 40-year-old Thai man who had been diagnosed as AIDS for 1 year with concurrent pulmonary tuberculosis without previous history of CMV infection. He had regular follow up at Nakhonpathom hospital and received anti-TB drugs with poor compliance. He visited hospital due to progressive abdominal discomfort with colicky pain for 1 week. The pain increased one day prior to the admission. Physical examination revealed marked tender at Mcburney's point without rebound tenderness. He did not have fever. Acute appendicitis was the most likely diagnosis. The laboratory tests showed moderately anemia without leucocytosis (Hct = 23%, WBC = 5,000/mm^3 ; neutrophils 83.9%, lymphocytes 7.2%, and monocytes 7.56%). The urinary examination showed few white blood cells. The anemia and hyponatremia conditions were corrected before surgery. The patient underwent appendectomy under universal precaution. The operative finding revealed inflamed appendix and 100-ml straw color fluid. The specimen was sent to Anatomical Pathological Division. The gross pathologic examination revealed an appendix measuring 5.5 cm. in length and 0.7 cm. in maximal diameter. The serosa was congested and covered by fibrinopurulent exudate. The lumen contained purulent material. Multiple serial cross sections and longitudinal section of tip were taken. Microscopic finding revealed acute suppurative inflammation involving whole thickness of appendiceal wall and intense at the tip. The periappendicitis was also present (Fig A). Among acute inflammatory cells, including numerous neutrophils and eosinophils, there were enlarged cells with a round purple intranuclear inclusion surrounded by clear halo. Nearly almost of them were involved endothelial cells (Fig B). The immunoperoxidase study for cytomegalovirus yielded positive result in the infected cells (Fig C).

The abdominal pain resolved and fever subsided after appendectomy. The surgical wound healed without infection. After discharge, oral antibiotic drugs were given and the patient attended routine follow-up.

Fig. A Light microscopic picture shows acute suppurative appendicits (H & E, X 100)

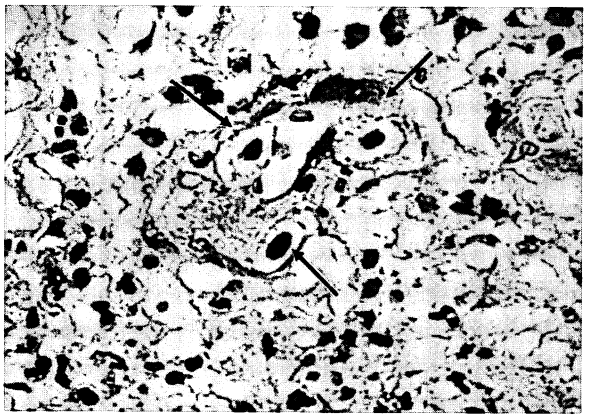

Fig. B Light microscopic picture shows infected endothelial cells with intranuclear inclusion and perinuclear halo (arrow) (H & E, X 1,000)

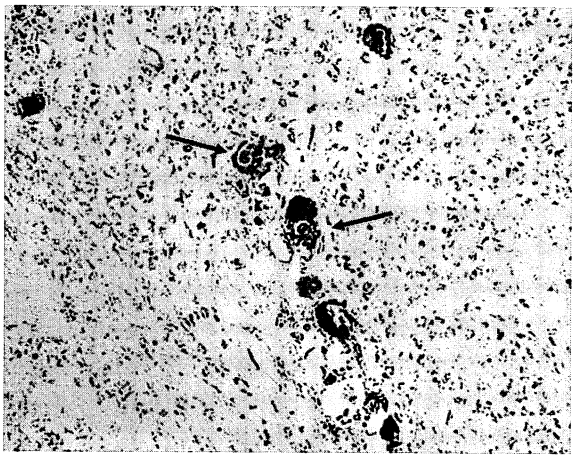

Fig. C Immunoperoxidase staining for cytomegalovirus shows intranuclear and intracytoplasmic positivity on endothelial cell (arrow) (CMV antibody, X 400)

Discussion

Vermiform appendix inflammation is a common surgical specimen in many Pathological Division. The pathogenesis of appendicitis is believed to reflect an initial insult of the mucosa, which resulting form luminal obstruction by fecalith, fragments of undigested food, or lymphoid hyperplasia followed by bacterial infection that progressively spreads from the mucosa into wall[9]. Viral infection, itself, dose not typically result in appendicitis. It is important for pathologists to recognize some pathogens causing appendicitis, including parasite, fungus and viral agents. Such findings are more crucial in the patients with AIDS who have risk of unusual opportunistic infection. CMV is the common viral infection in AIDS patients with CD4 counts less than 150 cells/mm[32]. The ascending colon and ileum are frequently affected sites in this population. Therefore, CMV infection in the appendix is not surprising, although it is exceeding rare[3].

Clinical diagnosis of appendicitis in this patient was difficult because of the presumptive diagnosis of tuberculosis ileitis, which was more common among AIDS patients. There are statistically significant differences in the duration of symptoms before presentation between patients who did and did not have

HIV infection (23 hours in the HIV-negative controls versus 48 hours for HIV-positive patients) and the presence of leukocytosis (69% in the HIV-negative control patients versus 0% in the HIV-positive patients)[10]. However, no preoperative symptom or physical examination could significance differentiate the patient CMV appendicitis from those with suppurative appendicitis.

Diagnosis of CMV colitis can be obtained from random colon biopsies of the ceacum, transverse colon and rectosigmoid region. It is difficult to get a specimen from the appendix before surgery and the diagnosis of CMV appendicitis is usually from careful routine histopathological examination of appendectomy specimen. Thus, almost patients are received antiviral drugs follow the pathological reported.

CMV commonly infects endothelial cells rather than epithelial cells. The histological pattern of enlarge cells with intranuclear and/or cytoplasmic inclusion and perinuclear halo is characteristic for CMV infected cells. However, the histological examination lack of sensitivity but it does represent a major means of diagnosing invasive CMV disease because of its specificity. Immunohistological method using antibodies to viral antigens helps in establishing the diagnosis early in the course of the disease when cytopathic changes have not yet developed.

Ganciclovir [9-(1,3-dihydroxy-2-propoxymethyl) guanine] is the treatment of choice for CMV infection in many organs eg. retinitis, pneumonitis, esophagitis, gastroenteritis, hepatitis, and colitis[3]. Used in gastrointestinal tract CMV infection, ganciclovir has achieved a success rate of 75% although the duration of remission is relatively short. In patients with CMV appendicitis, postoperative ganciclovir therapy is mandatory because other occult foci may exist. Recommended treatment includes a two-week of induction by 5 mg of ganciclovir per kilogram of body weight twice daily, and then six-week maintenance therapy at a dose of 5 mg per kilogram of body weight daily for five days a week[11]. With this regimen, the patients remain free of relapse in the following six months after treatment.

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