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Viral Infections of the Gastrointestinal Tract

Series Editor:

Richard A. Wright, MD

Professor and Chief, Division of Gastroenterology/Hepatology, Department of Medicine, University of Louisville School of Medicine, Louisville, KY

Contributors:

Neelima Reddy, MD

Fellow, Division of Gastroenterology/Hepatology, Department of Medicine, University of Alabama at Birmingham, Birmingham, AL

C. Mel Wilcox, MD

Professor of Medicine, Division of Gastroenterology/Hepatology, Department of Medicine, University of Alabama at Birmingham, Birmingham, AL

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Viral Infections of the Gastrointestinal Tract

Neelima Reddy, MD, and C. Mel Wilcox, MD

INTRODUCTION

Viral infections of the gastrointestinal (GI) tract predominantly arise in the setting of immune deficiency. Although they may occur at random following exposure to a pathogen in a normal host, these are mostly self-limited. In contrast, these infections typically result in significant morbidity and mortality in immunocompromised patients (eg, patients with HIV/AIDS or organ transplant) if untreated. Despite significant improvements in targeted immunosuppression and antimicrobial prophylaxis in the transplant setting, viruses remain important causes of disease.

The GI tract is a natural portal of entry for pathogens into the body, but numerous protective mechanisms, most importantly the mucosal immune system, help prevent or attenuate infections from these pathogens. In immunocompromised patients, these protective mechanisms are either impaired or lost, thereby predisposing to local or systemic infections, termed opportunistic infections, oftentimes by unusual pathogens. The 2 groups of patients who most commonly develop opportunistic viral GI infections are those with HIV/AIDS and those who have undergone organ transplantation. In patients with HIV, the incidence of viral GI infections rises markedly as immune function deteriorates and is inversely related to the absolute CD4 lymphocyte count.¹ However, the risk of these infections in patients with iatrogenic immune suppression after transplantation falls over time, as drug-induced immune suppression is tapered.² When organ rejection occurs, thus requiring a boosting of immune suppression, the risk of infection markedly escalates. In both groups of patients, the degree of immune suppression/dysfunction determines the incidence of infection.

For any immunocompromised patient with GI symptoms, the differential diagnosis depends on the suspected organ(s) involved and the type, severity, and duration of immune compromise. Timing of viral infections correlates with the interval after transplant: herpes simplex virus (HSV) is seen in the first 30 days, cytomegalovirus (CMV) between days 30 and 90, and herpes zoster after day 100. These observations

mandate targeted antimicrobial prophylaxis during periods of greatest vulnerability to these infections. Improvements in immunosuppressive medications as well as the use of CMV-seronegative organs and blood products for seronegative recipients have reduced the incidence of CMV infections in the post-transplant setting.³⁻⁵ In HIV-infected patients, the use of highly active antiretroviral therapy (HAART) has dramatically reduced the incidence of opportunistic infections, especially CMV.

This review takes a symptom/organ-based approach in a case study format to review the epidemiology, clinical features, diagnosis, and therapy for viral GI infections seen mostly in persons immunocompromised by AIDS and those with iatrogenic disease associated with organ transplantation or chemotherapy.

CASE PRESENTATIONS

CASE I

A 20-year-old man presents for evaluation of a “white tongue.” He has noted painless white “fuzzy” patches on the side of his tongue for several weeks. He denies local pain, itching, difficulty swallowing, fevers, or chills. His past medical history is significant for an episode of genital herpes 6 months prior to presentation. He reports having a single male sexual partner but denies ever using alcohol or illicit drugs. He is not taking any prescription or over-the-counter medications at this time. Physical examination reveals corrugated white lesions on the lateral borders of the tongue without erythema or other discoloration. The lesions cannot be scraped off (*see Figure 1*, page 6).

- Which of the following is consistent with this lesion?
 - Oral hairy leukoplakia (OHL)
 - Squamous cell carcinoma
 - Candidiasis
 - All of the above

The correct answer is A. The differential diagnosis includes all of the above, but the diagnosis is OHL. OHL is an asymptomatic lesion that may be a sign of HIV