

Herpes Simplex Virus Esophagitis in an Immunocompetent Patient

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Abstract

We present the case of a 17-year-old patient with no known comorbidity or history who was admitted due to dysphagia. Endoscopy revealed ulcerated lesions in the distal esophagus that were positive for herpes simplex virus type 1 (HSV-1) on immunohistochemistry. An examination of HSV-1 esophagitis in the immunocompetent patient is made.

Keywords

Esophagitis, herpes virus, dysphagia, immunocompetent.

INTRODUCTION

Herpes esophagitis is a well-known and described entity that usually occurs in patients with severe immunosuppression. This disease is also described in immunocompetent patients, only much less frequently: this group represents 4% of affected people⁽¹⁾. These patients usually present with predisposing factors such as alcohol use, eosinophilic esophagitis, malnutrition, or esophageal diseases associated with acid-peptic disease⁽²⁾. This article presents a case of herpetic esophagitis in a young patient without any previous comorbidity or known risk factors.

CASE DESCRIPTION

We present the case of a 17-year-old male patient with no known history. He consulted the emergency room due to a 4-day history of substernal pain with ill-defined characteristics that did not radiate and was associated with dysphagia for solids and liquids that caused total intolerance to the oral route. The condition was accompanied by a fever measured at 38.4 °C and dysuria. The patient denied any history of repeated bacterial or viral infections and, in general, any recurrent infections. He also did not report risky sexual behavior.

His vital signs on admission were blood pressure: 90/60 mm Hg, heart rate: 117 beats per minute (bpm), respiratory rate: 18 breaths per minute (rpm), oxygen saturation: 97%, and inspired fraction of oxygen: 21%. The physical examination revealed ulcerated oropharyngeal lesions and abdominal pain on both sides associated with bilateral positive fist-percussion.

The admission paraclinic tests showed creatinine: 1.31 mg/dL, urea nitrogen: 18 mg/dL, C-reactive protein: 4.81 mg/dL, hemoglobin: 16.4 mg/dL, hematocrit: 47.6%, leukocytes: 10,000/mm³, neutrophils: 7,100/mm³, lymphocytes: 1,200/mm³, platelets: 222,000/mm³, enzyme-linked immunosorbent assay (ELISA) for human immunodeficiency virus (HIV): negative, treponemal test: negative, cytochemical urine with gram-positive cocci and renal ultrasound with changes due to right pyelonephritis.

Dysphagia/odynophagia was studied with upper gastrointestinal endoscopy, which revealed severe ulcerated esophagitis, with a circumferential ulcer in the entire distal third and several triangular ulcers that ascended to the middle third, accompanied by cottony plaques in the proximal third that were hardly removed with washing (**Figure 1**). Given the findings, an infectious origin of

the esophagitis was suspected, and biopsies were taken, showing an ulcerated mucosa with foci of necrosis, numerous neutrophils, cellular debris, lymphoplasmocytes, hemorrhage, and abundant multinucleated giant cells. Immunohistochemistry for herpes type I had strongly positive staining in the multinucleated giant cells (**Figure 2**).

Empirical antibiotic treatment was started with piperacillin/tazobactam for pyelonephritis and intravenous acyclovir for esophagitis. After 72 hours, there was significant symptomatic improvement and tolerance to the oral route, so the patient was discharged with oral acyclovir to complete 10 days in total with this drug. The patient was followed up at home, and symptoms were wholly improved with the resolution of the oropharyngeal lesions.

DISCUSSION

A case of a patient with this herpes esophagitis concomitant with pyelonephritis was presented. This last entity occurs in 1.15% of people under 18 years of age⁽³⁾, regardless of whether they have immunosuppression. It has an annual rate of 3-4 cases per 10,000 men, irrespective of their immunological status⁽⁴⁾. The patient had no history

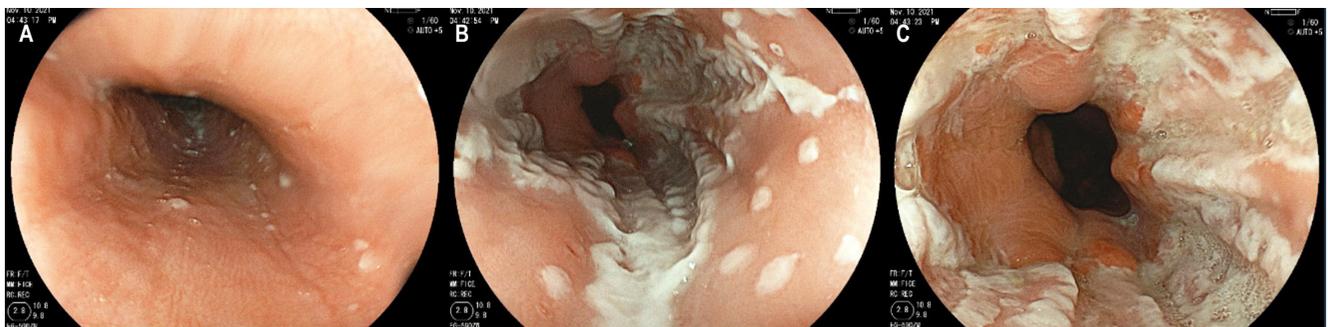


Figure 1. Upper endoscopy of the patient with herpetic esophagitis, lesions in different stages of evolution, from isolated vesicles to erosions and confluent ulcers. **A.** Proximal esophagus. **B.** Middle esophagus. **C.** Distal esophagus. Authors' archives.

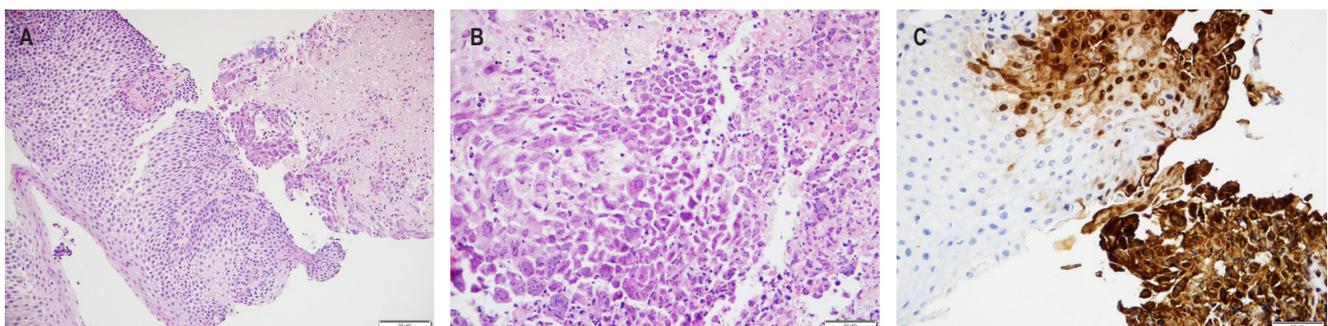


Figure 2. Biopsy of ulcers seen in **Figure 1**. **A.** Hematoxylin and eosin 200x. **B.** Hematoxylin and eosin 400x. **C.** Immunohistochemistry of herpes simplex virus type 1, 200x. Authors' archives.

of repeated viral or bacterial infections, much less in sites suggestive of primary immunodeficiency, such as the sino-pulmonary tract and mucosal surfaces⁽⁵⁾, nor past infections caused by encapsulated germs or enteric pathogens suggestive of humoral immunodeficiency^(6,7). Therefore, given that he had a negative HIV test in the absence of risky sexual behavior and that herpetic esophagitis can occur in people without immunodeficiencies^(8,9), without the need for further studies, it was considered that he was an immunocompetent patient.

Although the herpes simplex virus (HSV) affects up to 90% of the general population⁽¹⁰⁾, HSV esophagitis in immunocompetent patients is rare. In patients without immunodeficiency, literature reviews report few cases of a predominance of infection in males (70% versus 30%). This ratio is lost in patients over 40⁽¹¹⁾. The average age at infection is 28 to 35 years^(9,11). Esophagitis caused by HSV type 1 is more common than that caused by HSV type 2^(2,9).

In immunosuppressed patients, the most common cause is the reactivation of a latent infection, while in immunocompetent patients, it occurs more frequently during primary infections⁽¹⁰⁾. However, a literature review showed that the disease associated with the reactivation of the condition is also prevalent in this population⁽⁹⁾.

The most common clinical manifestation in patients affected by herpetic esophagitis is accompanied by odynophagia or dysphagia⁽¹²⁾, symptoms that occur in 60% and 37.5% of cases⁽⁹⁾. Additionally, there may be fever in 51% of cases, chest pain in 46%, and viral prodrome in up to 26% of affected patients⁽⁹⁾. It is not uncommon to also find lip and oropharyngeal lesions; in a few cases, lesions have been described in the hands and feet⁽¹¹⁾. Although gastrointestinal bleeding, Mallory-Weiss lesions, and esophageal perforation have been reported, they are rare complications of the disease^(9,10).

The diagnosis begins with clinical suspicion followed by endoscopic studies in which ulcers with raised edges are usually found that are predominant in the distal thirds of the esophagus. These raised edges may give the appearance of "volcano-like" ulcers, which macroscopically helps diffe-

rentiate them from cytomegalovirus involvement, in which the systemic condition and digestive symptoms may be similar. However, the ulcers tend to be linear, longitudinal, and deeper^(1,11,13).

The distal esophagus is affected in more than 60% of cases, and the middle esophagus in up to 40%. Isolated middle and proximal third infections are much less frequent⁽¹¹⁾. The final diagnosis is made through histopathological analysis of esophageal biopsies, in which ballooning degeneration of epithelial cells, multinucleated giant cells, Cowdry type A inclusions, and immunohistochemical staining for viruses are found⁽¹⁰⁾. Moreover, molecular biology studies are also helpful^(14,15). When conventional histopathological analysis is associated with polymerase chain reaction, a diagnostic yield of up to 90% can be achieved⁽⁹⁾. The serological diagnosis of primary infection is made with the positivation of antibodies or a four-fold increase in immunoglobulin G (IgG) between the acute disease stage and recovery⁽¹⁰⁾.

Patients with herpetic esophagitis have a good prognosis. The condition is self-limiting in all cases described. No clinical trials or high-quality evidence supports its management, especially antiviral therapy versus placebo. However, a shorter duration of symptoms has been reported with acyclovir⁽¹⁶⁾, findings that are also extrapolated from its beneficial use in genital HSV infections⁽¹⁷⁾. The treatment time in the reports is 7-14 days⁽⁹⁾.

So, it can be noted that, in our case, the patient had a typical clinical picture of HSV-1 infection in the esophagus. The dysphagia led to a digestive endoscopy being performed, whose findings of non-typical esophagitis due to reflux, with suspicion of an infectious origin, motivated the taking of biopsies that finally confirmed the diagnosis. Optimal management could be provided with which his symptoms were resolved and associated complications were avoided.

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REFERENCES

1. McBane RD, Gross JB. Herpes esophagitis: clinical syndrome, endoscopic appearance, and diagnosis in 23 patients. *Gastrointest Endosc.* 1991;37(6):600-3. [https://doi.org/10.1016/S0016-5107\(91\)70862-6](https://doi.org/10.1016/S0016-5107(91)70862-6)
2. Diezma-Martín AM, Gigante-Miravalles E, Castro Limo JD, Quimbayo Arcila CA, Puche Paniagua JJ. Herpetic esophagitis in immunocompetent host: Cases report. *BMC Infect Dis.* 2020;20(1):605. <https://doi.org/10.1186/s12879-020-05328-5>
3. Kwok WY, de Kwaadsteniet MC, Harmsen M, van Suijlekom-Smit LW, Schellevis FG, van der Wouden JC. Incidence rates and management of urinary tract infections among children in Dutch general practice: results from a

- nation-wide registration study. *BMC Pediatr.* 2006;6:10. <https://doi.org/10.1186/1471-2431-6-10>
4. Czaja CA, Scholes D, Hooton TM, Stamm WE. Population-Based Epidemiologic Analysis of Acute Pyelonephritis. *Clin Infect Dis.* 2007;45(3):273-80. <https://doi.org/10.1086/519268>
 5. Gathmann B, Mahlaoui N, Gérard L, Oksenhendler E, Warnatz K, Schulze I, et al. Clinical picture and treatment of 2212 patients with common variable immunodeficiency. *J Allergy Clin Immunol.* 2014;134(1):116-126.e11. <https://doi.org/10.1016/j.jaci.2013.12.1077>
 6. Winkelstein JA, Marino MC, Lederman HM, Jones SM, Sullivan K, Burks AW, et al. X-Linked Agammaglobulinemia: Report on a United States Registry of 201 Patients. *Medicine.* 2006;85(4):193-202. <https://doi.org/10.1097/01.md.0000229482.27398.ad>
 7. Oksenhendler E, Gérard L, Fieschi C, Malphettes M, Mouillot G, Jaussaud R, et al. Infections in 252 Patients with Common Variable Immunodeficiency. *Clin Infect Dis.* 2008;46(10):1547-54. <https://doi.org/10.1086/587669>
 8. Ramanathan J, Rammouni M, Baran J, Khatib R. Herpes simplex virus esophagitis in the immunocompetent host: an overview. *Am J Gastroenterology.* 2000;95(9):2171-6. <https://doi.org/10.1111/j.1572-0241.2000.02299.x>
 9. Canalejo E, García Durán F, Cabello N, García Martínez J. Herpes esophagitis in healthy adults and adolescents: Report of 3 cases and review of the literature. *Medicine.* 2010;89(4):204-10. <https://doi.org/10.1097/MD.0b013e3181e949ed>
 10. Lavery EA, Coyle WJ. Herpes simplex virus and the alimentary tract. *Current Gastroenterology Reports.* 2008;10(4):417-23. <https://doi.org/10.1007/s11894-008-0078-8>
 11. Ramanathan J, Rammouni M, Baran J, Khatib R. Herpes simplex virus esophagitis in the immunocompetent host: an overview. *Am J Gastroenterol.* 2000;95(9):2171-6. <https://doi.org/10.1111/j.1572-0241.2000.02299.x>
 12. Hoversten P, Kamboj AK, Wu TT, Katzka DA. Variations in the Clinical Course of Patients with Herpes Simplex Virus Esophagitis Based on Immunocompetence and Presence of Underlying Esophageal Disease. *Dig Dis Sci.* 2019;64(7):1893-900. <https://doi.org/10.1007/s10620-019-05493-x>
 13. Levine MS. Radiology of esophagitis: a pattern approach. *Radiology.* 1991;179(1):1-7. <https://doi.org/10.1148/radiology.179.1.2006257>
 14. Jazeron JF, Barbe C, Frobert E, Renois F, Talmud D, Brixi-Benmansour H, et al. Virological Diagnosis of Herpes Simplex Virus 1 Esophagitis by Quantitative Real-Time PCR Assay. *J Clin Microbiol.* 2012;50(3):948-52. <https://doi.org/10.1128/JCM.05748-11>
 15. Dekeyser S, El Nady M, Diaz E, Cassagnou M, Descamps D. Diagnostic d'œsophagite herpétique à HSV1 chez le sujet immunocompétent par PCR (Herpès Consensus Générique® - Argène). À propos de six cas. *Pathologie Biologie.* 2009;57(1):101-6. <https://doi.org/10.1016/j.patbio.2008.07.005>
 16. Kadayakkara DK, Candelaria A, Kwak YE, Loeser C. Herpes Simplex Virus-2 Esophagitis in a Young Immunocompetent Adult. *Case Rep Gastrointest Med.* 2016;2016:7603484. <https://doi.org/10.1155/2016/7603484>
 17. Tuddenham S, Hamill MM, Ghanem KG. Diagnosis and Treatment of Sexually Transmitted Infections: A Review. *JAMA.* 2022;327(2):161-72. <https://doi.org/10.1001/jama.2021.23487>