Case Report

Retropharyngeal Abscess in HIV-Infected Patient

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Abstract

Retropharyngeal abscesses are rare in adults. Retropharyngeal abscesses are usually Pyogenic. They occur mostly in immune compromised patients or as a foreign body complication. Retropharyngeal abscesses can pose an immediate life-threatening emergency, with potential for airway compromise and other complications. We present a case of retropharyngeal abscess in HIV-infected patient, without foreign body complication or trauma.

Keywords: Retropharyngeal abscess; HIV-infected patient.

Background

Retropharyngeal abscesses are rare in adults. They occur mostly in immune compromised patients or as a foreign body complication. Retropharyngeal abscess is usually Pyogenic. However, the location and likely pathophysiology suggest that streptococcal species, particularly streptococcus pyogenes predominate, followed by staphylococcus aureus, anaerobes and Gram negative oral flora. Infections are often polymicrobial. Prior cases reports of methicillin-resistant staphylococcus aureus (MRSA) retropharyngeal abscess have been documented in the literature. We present a case of retropharyngeal abscess in HIV-infected patient, without foreign body complication or trauma.

Case Presentation

A 34 year-old HIV patient was admitted with fever and right-sided neck swelling that begun 2 days before admission. He had no history of skin abscesses or in family contacts. The neck was erythematous and tender. The patient had not had recent sick contacts, pet exposure, or travel. He did not receive antiretroviral drugs. On admission, body temperature was 39°5C. Physical examination revealed that his oropharynx was mildly erythematous. His neck was edematous, erythematous, and tender to palpation. The remainder of the physical examination was unremarkable. The following laboratory data were obtained: WBC count $18,500/mm^3$ with 65% neutrophils; rapid strep test and throat culture negative; C-reactive protein was 6mg/dL; blood culture showed no growth. CD4 count 350/ml. HIV viral load: 2000 copies/ml. Computerized tomography of the neck showed prevertebral/retropharyngeal low attenuation extending from the first cervical vertebral body inferiorly to the mediastinum. Incision and drainage of the abscess was performed, and culture of the purulent material grew Methicillin resistant Staphylococcus Aureus, which was susceptible to vancomycin. The patient was treated parenterally with vancomycin. During the ensuing 10 days, the patient's neck swelling decreased in size, and he was sent home to receive oral clindamycin. Two weeks after discharge, the patient's neck swelling and other symptoms had resolved. After 3 months, complete resolution of the retropharyngeal abscess was observed.

Discussion

We report a case of MRSA-associated retropharyngeal abscess that occurred in a patient infected with HIV.

Retropharyngeal abscess typically arises secondary to an infection of the nasopharynx, paranasalsinuses, or middle ear that drains to the retropharyngeal lymph nodes. 15% of cases of retropharyngeal abscess occur in children less than 1 year old.

Adult's retropharyngeal abscesses due to nasal or pharyngeal infection are rare and usually secondary to trauma, foreign bodies, or a complication of dental infections [1]. Retropharyngeal abscesses can pose an immediate life-threatening emergency, with potential for airway compromise and other complications [2]. Abscesses in this space can be caused by aerobic organisms (Streptococci and Staphylococcus Aureus), anaerobic organisms (*Bacteroides* and Veillonella), or Gram-negative organisms (*Hemophilus parainfluenzae* and *Bartonella henselae*) [3]. In our patient we isolated Staphylococcus Aureus. Rare reports of MRSA as a cause of retropharyngeal abscess. MRSA bacteremia and surgical sites infections are associated with greater morbidity and mortality than MSSA infections. The high mortality rate associated with retropharyngeal abscesses is due to its association with airway obstruction, mediastinitis, aspiration pneumonia, epidural abscess, **jugular veinous** thrombosis, necrotizing fasciitis, sepsis, and erosion into the carotid artery. The mortality rate was 2.6%

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in a study of 234 adults with deep space infections of the neck in Germany [4]. The cause of death was sepsis with multiorgan failure.

Retropharyngeal abscess is more common in males than in females. The principal symptoms in adults are sore throat, fever, dysphasia, odynophagia, neck pain and dyspnoea. The most common physical presentation is posterior pharyngeal oedema, **nuchal rigidity**, **cervical adenopathy**, and stridor [5].The signs of infection may be lacking in certain situations of immune suppression [6,7]. CT contributes greatly to the diagnosis. Any suspected retropharyngeal abscess should be prescribed antibiotics.

There have been rare reports of MRSA as a cause of retropharyngeal abscess [8]. MRSA will become a more common cause of retropharyngeal abscess. MRSA bacteremia and surgical site infections are associated with greater morbidity and mortality, suggesting that this pathogen may be a more virulent organism [9-11].To date there has been only rare reports of MRSA as a cause of retropharyngeal abscess. Community-acquired MRSA becomes increasingly prevalent, particularly in HIV patients.

The overall incidence of retropharyngeal abscess seems to be increasing and has been attributed to improved radiologic detection methods, decreased initial use of antibiotics for oropharyngea infections, and increased virulence of MRSA. The incidence of retropharyngeal abscess may be expected to increase further with an increasing prevalence and virulence of MRSA infections, particularly in HIV infected patients. The presence of MRSA Panton-Valentine leukocidin virulence factor has been recently associated with increased incidence of lower extremity infections complicated by deep venous thrombosis.

The treatment of retropharyngeal abscess consists of empiric antibiotic treatment and surgical drainage. Clinicians debate the need for and timing of surgical drainage in some cases. Historically, empiric antibiotic treatment has been clindamycin or ampicillin/sulbactam. Clindamycin may be the most appropriate choice of therapy for patients who present with deep neck abscesses in region with a high prevalence of MRSA.

Authors recommend combining it with a surgical drainage of the collection [12]. In our patient, the puncture of the abscess and the antibiotics were sufficient to control the collection. The control of **comorbidity** is important, which in our study necessitated antiretroviral.

Methicillin-resistant Staphylococcus aureus (MRSA) is a preventable infection that can lead to significant morbidity and mortality among PLHIV.

In the United States, PLHIV have substantially higher incidence of MRSA infections than the general population (12.3/1,000 person years compared with 1-2/1,000 person years) [13] and MRSA remains a substantial reason for hospital admission [14].

Metropolitan areas throughout the country have documented a substantial increase in MRSA infections [15,16], with an incidence 5 times greater in PLWH than HIV-uninfected persons within a large health care system [17]. Despite recent reported declines in skin and soft tissue infection, PLHIV continue to shoulder a disproportionate burden of disease [18].

Key risk factors for MRSA colonization and infection have been identified as a result of these data and include substance abuse [19,20]; high-risk sexual practices in persons with greater numbers of sex partners, regardless of sexual orientation; and having a sexual partner with a known skin infection [21]. Additional risks for MRSA infection among PLHIV include male sex, incarceration history [19], lower CD4 counts [16,17,22], high viral load [16,23], recent hospital admission [24], b-lactam antibiotic use [15], lack of cotrimoxazole prophylaxis [17,23], and known MRSA infection in the last 12 months [15].

The findings from one study provide new information about risk factors for MRSA colonization and are particularly relevant to the ongoing debate regarding body site colonization and sexual acquisition among this vulnerable population [25]. Use of HIV antiretroviral therapy (ART) lowered the odds of MRSA colonization. Although several studies have looked at use of ART as a risk factor for MRSA [26], 3 of the 4 studies that found any association did so only in univariate analyses [27-29]. Only 1 study showed significance in a multivariate analysis, with reduced odds of MRSA infection when taking ART [23]. Findings [25] suggest that receiving ART may lower the odds of colonization as well.

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