

CASE REPORT

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Bilateral peritonsillar abscess in a young diabetic patient: A case report

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ABSTRACT

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Introduction: Bilateral peritonsillar abscesses continue to be a rare presentation to the emergency departments. Nevertheless, they pose a high risk of airway compromise given the narrowing of the oropharynx, and therefore should be recognized immediately and managed effectively.

Case Report: We present the case of a 20-year-old female with type 1 diabetes who presented to the emergency department for one week of progressively worsening throat pain, difficulty swallowing, and fevers. She was found to have large, bilateral peritonsillar abscesses, which were successfully drained at bedside in the emergency department without complications.

Conclusion: This case documents the incidence and management of bilateral peritonsillar abscesses in a young woman with uncontrolled diabetes. Furthermore, this case contributes to the limited literature of bilateral peritonsillar abscesses.

Keywords: Bilateral peritonsillar abscess, ENT, Quinsy

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INTRODUCTION

Peritonsillar abscesses are one of the most common infections of the ear, nose, and throat (ENT), with emergency physicians well-versed in both the clinical diagnosis and management of these infections. There are 10–40 cases of peritonsillar abscesses that occur per every 10,000 individuals in the United States every year [1]. However, bilateral peritonsillar abscesses are a rare presentation of these infections and have the potential to lead to diagnostic misadventure since other more common and benign infections typically present with bilateral tonsillar swelling. Considering the possibility of bilateral peritonsillar abscess, performing the appropriate investigations may prevent the progression to retropharyngeal abscess, sepsis, or fatal airway compromise.

CASE REPORT

A 20-year-old woman with a history of insulin-dependent type 1 diabetes presented to the emergency department for five days of progressively worsening throat pain associated with painful swallowing and difficulty speaking. On arrival, she could only tolerate fluids. Immediately prior to the development of her throat pain, the patient had a fully resolved upper respiratory infection. She also expressed that she had run out of her insulin glargine and insulin lispro a month ago. At home, she attempted to self-medicate the pain with acetaminophen, which did not provide any subjective relief of her throat pain. The patient endorsed both social alcohol use and daily electronic cigarette use. She had no history of intravenous drug use. Vaccinations were up to date.

Upon arrival at the emergency department, her capillary blood glucose measured 488 mg/dL. Her vitals were: blood pressure of 102/66, pulse of 115 beats per minute, oral temperature of 99.9°F (37.7°C), respirations of 16 breaths per minute, and pulse oxygen saturation of 97%. On physical examination, the patient appeared pale and mildly diaphoretic, with significant posterior oropharyngeal swelling and erythema, and a relatively decreased oropharyngeal space. There was no uvular deviation, asymmetry, or exudates. There was no drooling or stridor. She could speak full sentences, but with discomfort. Lungs were clear to auscultation without any respiratory distress. Physical examination was otherwise unremarkable. Relevant laboratory investigations returned with the following measurements: white blood cell count of 17.76 thousands per microliter (k/uL) (Reference [Ref]: 4.80–10.80 k/uL), hemoglobin 12.7 grams per deciliter (g/dL) (Ref: 14.0–18.0 g/dL), neutrophil percentage of 78.2 (Ref: 44.0–70.0%), and lymphocyte percentage of 14.4 (Ref: 20.0–45.0%).

The patient was empirically treated for peritonsillar abscess with 600 mg of intravenous clindamycin, 10 mg of intravenous dexamethasone, and 2 liters of intravenous lactated ringers prior to obtaining imaging.

Computed tomography (CT) of the soft tissue of the neck with intravenous contrast revealed bilateral palatine tonsillar abscesses. The right side measured 2.1×1.8×2.4 cm and the left side measured 2.1×2.0×2.7 cm (Figures 1 and 2). There was a narrowing of the oropharyngeal airway to 9 mm. Ear, nose, and throat consultation was placed, and abscesses were drained at bedside using an 18-gauge needle aspiration technique, with additional incision and drainage using an 11-blade scalpel to make a single curvilinear incision over the abscess. There was a return of copious purulent fluid on bilateral tonsils. There were no complications. The patient was admitted to the medicine service for further tailoring of her anti-hyperglycemic agents and discharged with an antibiotic regimen consisting

of 600 mg of oral clindamycin every 12 hours for 14 days. She was seen 14 days after discharge in the ear, nose, and throat clinic, and was found to have full resolution of her abscesses. At that time, it was recommended that she will undergo a total tonsillectomy.



Figure 2: Computed tomography of the neck with IV contrast—head window.

DISCUSSION

A peritonsillar abscess is described as a collection of pus within the peritonsillar space, often a proposed complication of bacterial tonsillitis where the polymicrobial infection spreads posteriorly into the peritonsillar space [2]. Typically, patients will present febrile, with progressive tonsillar swelling, asymmetric oropharynx secondary to a deviated uvula, and difficulty eating and swallowing. The occurrence of peritonsillar abscesses is about 10–40 annual cases per 10,000 persons [1]. Therefore, with the relatively high prevalence, and 63,000 annual emergency department visits in the United States [3], emergency medicine providers are typically well-versed in the recognition of peritonsillar abscesses. Although diagnosis may be made clinically, obtaining a CT of the neck remains the primary mode of diagnosis as it can help evaluate the size and the precise location of the purulent collection, aiding in the accurate attempts at either needle aspiration versus incision and drainage [4]. Drainage typically occurs at bedside in the emergency department unless complicated by airway compromise, which will then warrant surgical intervention in theater. Drainage is then followed by a course of antibiotics, with elective tonsillectomy on an outpatient basis.

Bilateral peritonsillar abscesses, however, may pose a diagnostic challenge on arrival to the emergency department, since the physical features that aid clinicians



Figure 1: Computed tomography of the neck with IV contrast—tissue window—Bilateral palatine tonsillar abscesses with the right side measuring 2.1×1.8×2.4 cm and the left side measuring 2.1×2.0×2.7 cm.

with diagnosis of unilateral peritonsillar abscess are lacking. With an incidence rate described between 1.8% and 4.9% [1, 5], providers may lean more toward more common etiologies of bilateral tonsillar swelling, including viral tonsillitis, strep pharyngitis, or infectious mononucleosis. The misdiagnosis of bilateral peritonsillar abscesses may be fatal, as progressive enlargement of the bilateral tonsils may narrow the airway causing acute obstruction. Although cases of bilateral peritonsillar abscesses leading to acute airway obstruction have not yet been documented, other forms of tonsillar infections have been cited with some requiring emergent intubation. In a case involving a 17-year-old patient presenting to the emergency department, bilateral bacterial tonsillitis, although without abscess, led to acute airway obstruction requiring immediate intubation and resuscitation despite the patient having initially presented in stable condition [6]. Furthermore, untreated peritonsillar abscesses may extend inferiorly resulting in a retropharyngeal abscess, requiring more invasive techniques for drainage.

Opportunities exist for further diagnostic and therapeutic optimization with regard to bilateral peritonsillar abscesses. Considering the possibility that the presence of bilaterally enlarged tonsils may decrease the diagnostic likelihood of bilateral peritonsillar abscesses for the clinician, it is worth exploring the potential of alternative diagnostic strategies, such as assessing the serum neutrophil-lymphocyte ratio or evaluating for the presence of abscesses with bedside sonography.

A systematic review and meta-analysis published in Academic Emergency Medicine of 812 patients, 541 of whom had peritonsillar abscesses, bedside ultrasonography yielded a sensitivity and specificity of 74% and 79%, respectively [7]. Furthermore, radiology-operated sonography yielded a sensitivity and specificity of 89% and 71%, respectively [7]. Although CT imaging has a significantly higher sensitivity [4], the potential to perform bedside sonography to promptly diagnose the presence of unilateral or bilateral peritonsillar abscesses may prevent fatal complications such as airway compromise. Furthermore, this diagnostic strategy may decrease preventable radiation from CT [8] and decrease healthcare costs. Additionally, it is important to remember that not all healthcare facilities have access to CT.

Neutrophil to lymphocyte ratio has become a serum investigation of interest for clinicians and researchers over the past decade, as an increased neutrophil-lymphocyte ratio has been noted as a marker for significant physiologic stress increasing as early as 6 hours after the onset of illness [9]. Increased physiologic stress increases the neutrophil count while attenuating the production of lymphocytes by virtue of catecholamines and cortisol production [9]. While a normal neutrophil-lymphocyte ratio has been proposed to be between 1 and 3, different value cut-offs have been suggested for different illnesses, with higher values risk stratifying patients for both diagnostic and mortality purposes. Although the

literature is limited on the correlation of peritonsillar abscesses and neutrophil-lymphocyte ratio, a study with 180 pediatric patients with acute bacterial tonsillitis with or without deep neck space infection found that patients with deep neck space infection had a significantly higher mean neutrophil-lymphocyte ratio compared to patients with bacterial tonsillitis without an abscess collection [10]. The study found the optimal ratio cut-off to be 5.4 [10]. In this case report, the neutrophil-to-lymphocyte ratio was 5.43.

CONCLUSION

Bilateral peritonsillar abscesses continue to be a rare presentation to the emergency department. Prompt diagnosis and management are necessary to prevent progression to further complications such as acute airway compromise. While this case serves as an example to clinicians on the presentation of bilateral peritonsillar abscesses, it also sheds light on how neutrophil-to-lymphocyte ratios and bedside sonography may potentially be used to improve diagnostic strategies.

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Author Contributions

Shayan Azizi – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Jesse Kenney – Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Rosamaria Robustelli – Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Yalini Pathmakumar – Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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