Intratonsillar abscess: A rare cause for a common clinical presentation

Eng Cern Gan, MBBS, MRCS; Yuk Hui Ng, MBBS, MRCS;
Siew Yoong Hwang, MBBS, FRCS; Peter Kuo San Lu, MBBS, FRCS

Abstract

Intratonsillar abscess is a rare clinical condition in patients who present with odynophagia. We report the case of a 33-year-old man who presented with odynophagia, unilateral tonsillar enlargement with palatal fullness, and deviation of the uvula. Failed attempts at drainage of a presumptive peritonsillar abscess and a worsening of signs and symptoms led to a clinical suspicion of a parapharyngeal abscess. Computed tomography of the neck detected a 2.6 × 2.3-cm intratonsillar abscess. The abscess was drained, and the patient's signs and symptoms resolved. Our review of the current English-language literature revealed that only 8 such cases have been previously reported. We report this new case to increase awareness of this condition, to demonstrate the diagnostic difficulty in such cases, and to discuss the pathophysiology of intratonsillar abscess formation.

Introduction

Intratonsillar abscess is a rare entity. Our search of the current literature found only 8 previously reported cases.[1,2] Peritonsillar abscess is a far more common complication of acute tonsillitis, and it should be considered initially in patients with odynophagia, palatal fullness, and uvula deviation. In cases where suspected peritonsillar abscess is not found, the diagnosis must be reevaluated, and parenchymal tonsillar abscess should be considered as a possible working diagnosis.

Case report

A 33-year-old Chinese man with no pertinent medical history presented with a 3-day history of worsening sore throat, fever, and odynophagia. He had no history of any foreign-body ingestion or tonsillitis.

From the Department of Otolaryngology, Changi General Hospital, Singapore.

Corresponding author: Dr. Eng Cern Gan, Department of Otolaryngology, Changi General Hospital, 2 Simei St. 3, Singapore 529889, Republic of Singapore. Phone: 65-6788-3778; fax: 65-6260-9176; e-mail: ecgan@hotmail.com

On examination, he was febrile (38°C) and had trismus. Inspection of his oropharynx revealed enlargement of the right tonsil, right-sided palatal fullness, and deviation of the uvula to the left. No cervical lymphadenopathy or neck swelling was evident.

A complete blood count revealed leukocytosis (total white blood cell count: 27.5 × 10^9/L) and a normal white blood cell differential. A presumptive diagnosis of peritonsillar abscess was made. Needle aspiration and incision of the presumed abscess were performed without yield. The patient was treated with intravenous crystalline penicillin, but the next day his symptoms worsened and he developed a vague fullness on the right side of his neck. Peritonsillar exploration again failed to locate an abscess, so a computed tomography (CT) scan of the neck was ordered. It showed a 2.6 × 2.3-cm intratonsillar abscess and a right-sided deep cervical lymphadenopathy (figure).

The tonsillar abscess was drained intraorally with the patient under general anesthesia. Drainage resulted in immediate symptomatic relief, and the patient was discharged well the following day. The pus from the tonsil grew *Staphylococcus aureus* and mixed anaerobic flora.

At outpatient review 1 week later, the patient remained asymptomatic, and he was scheduled for a tonsillectomy 1 month later. During the tonsillectomy, the right tonsil was noted to be highly vascular and very adherent. Histologic analysis of the tonsils identified chronic tonsillitis, and cultures of the tonsillar tissue demonstrated mixed bacterial growth. The patient's postoperative period was complicated by secondary hemorrhage on day 9. The bleeding was stopped with silver nitrate cautery, and the patient recovered well.

Discussion

The palatine tonsils are derived from the endoderm of the second pharyngeal pouch, and they are located in the tonsillar fossae between the anterior and posterior

pillar of the fauces. They are made up of lymphoid tissue filled with squamous channels known as *tonsillar crypts*, which open onto the surface.[3] Breaks in the crypt epithelium allow for the interaction of antigenic stimuli such as bacteria and viruses with tonsillar lymphocytes.[1] Contraction of the palatoglossus and palatopharyngeal muscles may lead to expulsion of the contents of the tonsillar crypts. Inflammation and infection arise when tonsillar crypt debris fails to clear because of structural problems or local conditions.[1] Acute follicular tonsillitis occurs when a virulent organism enters and replicates in the tonsillar crypt base.[1] This may then be complicated by infection of the peritonsillar space.

Michaels and Hellquist suggested that when a suppurative focus arises in a setting of acute tonsillitis and outward drainage is prevented by blockage of the tonsillar crypts, the pus will tend to penetrate inward.[3] The area of least resistance is at the loose areolar tissue located behind the upper pole of the tonsil. Therefore, abscesses usually develop in the retrotonsillar region, where they can cause bulging of the overlying tonsil and contralateral deviation of the uvula and soft palate. In the case of an intratonsillar abscess, natural drainage, both inward and outward, is somehow prevented, leading to the accumulation of pus within the tonsillar tissue.

The pathogenesis of intratonsillar abscess is not well documented. Two mechanisms have been postulated: (1) direct extension of a crypt abscess into the tonsillar parenchyma and (2) seeding of bacteria throughout the tonsil via the bloodstream or lymphatics.[1]

A hot tonsillectomy for our patient might have provided some insight into the mechanism of intratonsillar abscess, as the presence of a crypt abscess would favor the "direct extension" postulate. Unfortunately for our patient, the clinical decision was made to perform interval tonsillectomy. Not unexpectedly, histologic examination at that time showed chronic tonsillitis, as the acute changes would have resolved.

The traditional method of ascertaining the presence of a peritonsillar abscess has been the detection of pus in the peritonsillar region, whether by needle aspiration or by incision and drainage. In cases where pus is not present, the pathology is usually attributed to peritonsillitis or unilateral tonsillitis. Our case clearly demonstrates the potential pitfall of such a management algorithm because any collection of pus that is not in the peritonsillar region would escape detection and lead to a delay in diagnosis and treatment.

Recent advances in ultrasound technology have facilitated the development of intraoral probes, which have been shown to be effective in demonstrating the presence of peritonsillar abscess.[4-6] Scott et al reported a sensitivity of 89% and a specificity of 100% for the detection of peritonsillar abscess with intraoral ultrasonography.[4] The use of intraoral ultrasonography would not only prevent patients from having to go through exploratory aspirations or drainage, but it would also be able to pick up the presence of abscesses in atypical regions, including a tonsillar abscess.

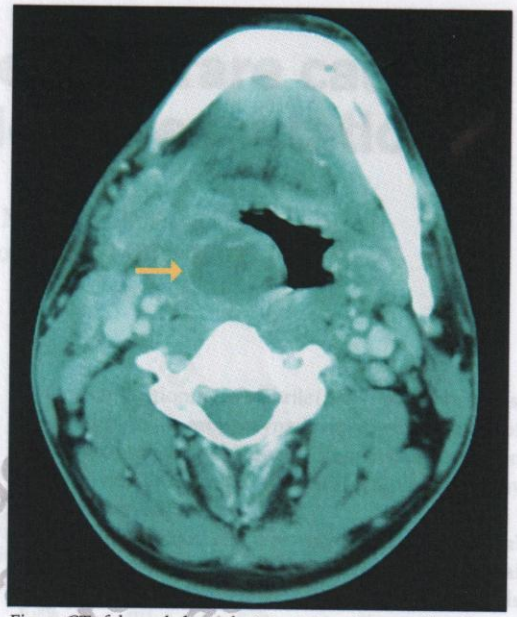

Figure. CT of the neck shows the 2.6 × 2.3-cm intratonsillar abscess (arrow).

In any case, intratonsillar abscess is a rare condition that should be considered as a possible differential diagnosis when a suspected quinsy is not found.

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