



Bilateral intratonsillar abscess: A novel management approach to a rare condition

İki taraflı intratonsiller apse: Nadir bir hastalığa yeni bir tedavi yaklaşımı

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ABSTRACT

Bilateral intratonsillar abscess is an extremely rare clinical condition. A 42-year-old male patient presented with stridor, difficulty in breathing, drooling saliva, muffled voice, fever, and trismus. Computed tomography showed bilateral intratonsillar abscess. The patient was treated with wide bore needle aspiration, intravenous antibiotics, and elective tonsillectomy. In conclusion, we demonstrate the effectiveness of needle aspiration in the management of bilateral intratonsillar abscess.

Keywords: Bilateral; intratonsillar abscess; tonsillar abscess.

ÖZ

İki taraflı intratonsiller apse, çok nadir görülen klinik bir durumdur. Kırk iki yaşında erkek hasta stridor, solunum güçlüğü, ağızdan salya akması, boğuk ses, ateş ve çene kitlenmesi ile başvurdu. Bilgisayarlı tomografide iki taraflı intratonsiller apse izlendi. Hasta geniş uçlu iğne aspirasyonu, intravenöz antibiyotik ve elektif tonsilektomi ile tedavi edildi. Sonuç olarak, iki taraflı intratonsiller apse tedavisinde iğne aspirasyonunun etkinliği gösterilmiştir.

Anahtar Sözcükler: İki taraflı; İnatonsiller apse; tonsiler apse.

Intratonsillar abscess (ITA) is a rare condition, and only 40 patients have been reported in the literature across all age groups. Scarcer still are bilateral ITAs, with only one other case reported as an adult^[1] and one in a child.^[2] The formation is thought to occur due to compromised lymphatic flow during acute tonsillitis, leading to bacterial accumulation and subsequent abscess formation.^[3] Factors which contribute to reduced lymphatic flow include dehydration, inflammatory swelling of tonsillar follicles, and previous peritonsillar abscesses (PTAs). An

alternative mechanism for the pathophysiology of ITA is the seeding of bacteria from the blood stream or lymphatic system.^[3]

Differentiating ITAs from PTAs and uncomplicated tonsillitis is challenging in the initial presentation, due to similarities in symptoms and signs. Sore throat, odynophagia, and fever are common, although a recent case of ITA presented without fever or sore throat.^[4] The presence of trismus, soft palate asymmetry and unilateral tonsillar enlargement with palatal



fullness may also lead to an incorrect diagnosis of PTA,^[5,6] although in one study, the former was found to be twice as common in ITAs than PTAs.^[7] It is important to consider this as a clinical possibility, as these abscesses, if diagnosed, can be treated with intratonsillar needle drainage and intravenous (IV) antibiotics with subsequent swift resolution of symptoms and signs.

The largest case series of ITA demonstrated that 26% (10/38) of patients with clinically suspected PTA had ITA, as diagnosed by enhanced computed tomography (CT).^[8] A parapharyngeal wall abscess was a provisional diagnosis, before CT scan in the only other case of adult bilateral ITA, as dysphagia, voice change, stridor, and fever were present in a 42-year-old diabetic patient with a bulging and tender right submandibular region.^[1]

The management of ITA still remains controversial and there is a limited number of evidences due to the infrequency of its presentation. The sole use of intravenous antibiotics is effective in children,^[2] although invasive intervention predominates in adults. Yang et al.^[5] successfully treated patients by needle aspiration and post-procedural antibiotics, whereas other authors have advocated incision and drainage under general anesthetic,^[6,8] "hot tonsillectomy" after failure of intravenous antibiotics^[7] or have implemented different management strategies for each patient.^[9] The only previous case of adult bilateral ITA was managed by hot tonsillectomy 12 hours after presentation, due to impending airway collapse, and the likelihood of recollection in a diabetic patient.^[1]

Herein, we, for the second time, report a unique adult case of bilateral ITA which was treated with wide bore needle aspiration, intravenous antibiotics, and elective tonsillectomy.

CASE REPORT

A 42-year-old Afro-Caribbean man presented to the emergency department with stridor, severe trismus, difficulty in breathing, and inability to swallow saliva. He had a two-week history of progressively worsening sore throat, fever, voice change, and reduced oral intake. He had no night sweats or weight loss. His past medical history was non-specific; he had no history of diabetes, he was immunized in childhood, and

had no recent travel history. He was pyrexial on admission (38 °C), had significant tachycardia (heart rate 140 bpm), and tachypnea, although his oxygen saturations remained higher than 92% in room air with a stable systolic blood pressure of 130 to 140 mmHg.

On examination the patient was dehydrated and had widespread tender cervical lymphadenopathy. The oropharynx was difficult to examine due to trismus, resulting in a maximum intra-incisor distance of 2 cm. There was no asymmetry or swelling of the soft palate or lateral pharyngeal wall. Neck movements were not restricted, and the floor of the mouth was not raised. Following the initial treatment, when trismus reduced and the oropharynx could be visualized, the tonsils were seen to be Grade IV with mild exudate, giving the appearance of acute tonsillitis. Flexible nasendoscopy showed a congested nasopharynx with thick secretions, the arytenoids were erythematous; however, the epiglottis, base of tongue and vocal cords were unremarkable.

The initial treatment to stabilize the airway included intravenous dexamethasone, intravenous hydrocortisone, and adrenaline nebulizers with rapid crystalloid fluid resuscitation and intravenous antibiotics. The patient's heart rate reduced to 120 bpm and his stridor and difficulty in breathing resolved. Serum blood tests indicated an inflammatory response with a white cell count of $19.2 \times 10^9/L$, neutrophil count of $15.2 \times 10^9/L$, and C-reactive protein of 333. The patient suffered from an acute kidney injury due to dehydration caused by reduced oral intake with a serum creatinine level of 107 $\mu\text{mol/L}$ (from 71 $\mu\text{mol/L}$ at baseline) and an estimated glomerular filtration rate of 71.

Due to the symptom severity and persistent fever, the patient underwent neck CT with a contrast agent to rule out a deep neck space abscess. The CT demonstrated low-attenuation masses of the tonsils bilaterally (ITAs) alongside the prominent neck nodes (Figure 1). Due to the risk of rapid deterioration and airway compromise, the decision was made to use a wide bore needle and syringe to confirm the presence of an abscess and immediately aspirate the pus from both ITAs. A total of 7 mL of pus was aspirated from the left and 8 mL from the right ITA and all specimens were sent for

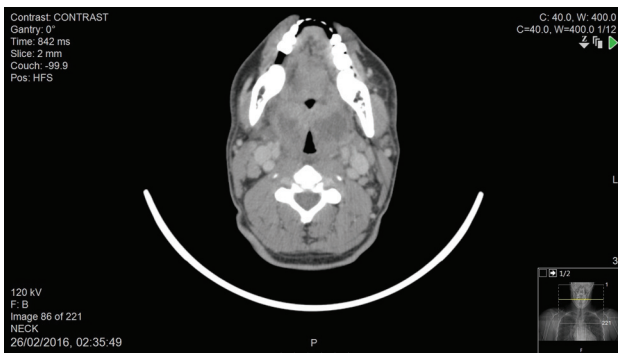


Figure 1. A transverse section of computed tomography showing bilateral low-attenuation masses at the tonsils.

culture. Both sides grew Group A Streptococci on culture. Gram-negative rods were identified in the left lesion, but not in the right. Sensitivities indicated efficacy of amoxicillin, erythromycin, and penicillin. However, there was no bacterial growth in the blood cultures. The patient mounted a good immune response and was hospitalized in the ward for three days. He made an uneventful recovery on intravenous benzylpenicillin, metronidazole, and fluid replacement before being discharged with oral phenoxymethylpenicillin, and his kidney functions returned to baseline. His tonsils appeared normal on discharge. At six months, he has remained well without recollection. He has been scheduled for elective bilateral tonsillectomy to prevent recurrence of this severe and potentially airway threatening complication of tonsillar infection.

DISCUSSION

We present the second documented case of bilateral ITA in an adult, demonstrating several valuable learning points. Similarities in presentation between our case and the case of bilateral ITA described by Cheong et al.^[1] include sore throat, voice change, dehydration, and fever. However, our case also indicates that bilateral ITA can occur just as severely in non-diabetic people and that trismus may also be a presenting feature. Intubation of these patients, therefore, may be challenging. Thus, trismus in the absence of PTAs or lateral pharyngeal wall changes should raise the suspicion of an ITA. In our case, there were also thick secretions in the nasopharynx; this may be present in rhinosinusitis, and it is more likely to be due

to odynophagia and oropharyngeal obstruction preventing natural clearing of nasal secretions.

As in our case, contrast-enhanced CT has a role in apparent tonsillitis, when symptoms are out of proportion to the physical examination findings, including in partial airway obstruction and trismus. Evidence suggests that ITAs are underdiagnosed;^[7] therefore, other indications for contrast-enhanced CT include reduced response to treatment with antibiotics, steroids and fluid, limited ability to examine and symptoms suggestive of an abscess, such as swinging pyrexia. Such indications need more research to clarify.

Care should be taken when requesting contrast-enhanced CT scans in patients presenting with severe upper aerodigestive tract infections or abscesses. In our case, acute kidney injury was present before the CT scan, and the risks and benefits of administering contrast were discussed with the radiologist. In general, it is recommended that dehydration is corrected before scanning, and kidney function is ascertained by blood tests.

Following the diagnosis, management involves intratonsillar drainage of these abscesses. The pus should be always sent for microscopy, culture, and sensitivity analyses. Each positive abscess aspirated should be sent separately for culture, as different bacteria may grow from each ITA. Thus, antibiotic choice after aspiration can be directed by the microbes cultured and their sensitivity.

Bilateral ITA with impending complete airway obstruction can be effectively stabilized with intravenous dexamethasone, hydrocortisone, and adrenaline nebulizers. The use of needle aspiration is common in the management of unilateral ITA.^[3,9] We have demonstrated its efficacy as the definitive management in bilateral ITAs, followed by elective tonsillectomy, as an alternative to hot tonsillectomy.^[1] Elective tonsillectomy is associated with lower complications than hot tonsillectomy with a national tonsillectomy audit rate of bleeding, necessitating operating theatre being 1% in the elective setting compared to 2.8% of hot tonsillectomies.^[10] The benefits of needle aspiration are that it can be performed immediately in the emergency department or the ward and avoids the need for general anesthetic, and the risks of intubating a compromised

airway. This is particularly the case in a non-diabetic patient in whom the risk of recollection is less than a diabetic patient.

In conclusion bilateral ITA is a rare entity. It can prove a diagnostic dilemma, if the soft palate is not asymmetrical. Careful clinical assessment, assessing for trismus, spiking temperature, and a lack of improvement with antibiotic treatment can guide us toward the correct diagnosis. Diagnosis can be confirmed by contrast-enhanced CT scan, followed by wide bore needle aspiration. However, due to the paucity of reported cases, the role of hot versus elective tonsillectomy, if any, needs to be assessed further.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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