Intratonsillar Abscess: Case Series of a Rare Entity

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Abstract
Intratonsillar abscess (ITA) is a rarely reported clinical entity in both children and adults. Despite its rarity ITA should be considered in the differential diagnosis of Peritonsillar abscess and Tonsillitis. CT scan is useful to confirm the presence of an ITA. The following case series summarizes three cases of intratonsillar abscess that presented to our centre and their management. The primary treatment modality in our cases involved needle aspiration with post-procedural antibiotics.

Keywords
Intratonsillar abscess, Needle aspiration, Tonsillectomy

Abbreviations
ITA: Intratonsillar Abscess; WBC: White Blood Cell Count

Introduction
Tonsillitis is a common pharyngeal infection in children and young adults, however intratonsillar abscess is a rare complication associated with it. Intratonsillar abscess is characterized by formation of abscess in the parenchyma of the tonsil. The literature reports only about 29 cases of intratonsillar abscess [1]. The clinical features may resemble tonsillitis or peritonsillar abscess, and radiological imaging may be required to confirm the diagnosis. Treatment modalities may vary from IV antibiotics, needle aspiration, incision and drainage to tonsillectomy. In our study we emphasize that needle aspiration under antibiotic cover would suffice as primary treatment with consideration of surgical intervention in cases of recurrence.

The following are the cases encountered in our setup and a brief discussion of this entity.

Case Reports
Case 1
A 35-year-old woman presented to our ENT Out Patient Department with complaints of recurrent episodes of swelling and pain in the right tonsillar region and odynophagia for a duration of 1 month. On examination: the patient was afebrile (96.7 °F) with pulse rate of 92 beats per minute and blood pressure of 116/76 mmHg. A complete ENT examination revealed a pale yellow swelling seen in the substance of right tonsil 4.5 cm, medially extending up to the midline, it had a soft, cystic consistency and was tender on palpation as in Figure 1a and Figure 1b. Rest of the oropharyngeal examination was normal. Neck examination showed palpable, jugulodigastric lymph node 2×1 cm, mobile tender, soft.

Figure 1a: Showing a pale yellow swelling seen in the substance of right tonsil.
tivities showed the efficacy of ceftazidime, amoxicillin & clavulinic acid. Tab Cefpodoxime 200 mg + Clavulinic acid 125 mg bid with analgesics were prescribed was given. Patient was free of symptoms in 7 days with no complications.

Case 3

A 30-year-old female patient, presented to us with throat pain, odynophagia and difficulty in opening mouth progressively over 10 days. On Clinical examination patient was afebrile (95.3 °F) with pulse rate of 86 beats per minute. On ENT examination had grade 1 trismus grade 1 with congested oropharynx and right tonsil showing 2’2 cm swelling as shown in Figure 3a.
and Figure 3b. Neck examination revealed a 1.5*2 cm soft in consistency, mobile tender level I lymph node. Blood investigations revealed leucocytosis (WBC count-14,400 cells/mm³) with peripheral neutrophilia and negative C-reactive protein. On clinical suspicion, swelling was subjected to needle aspiration. Thick 1 cm³ of purulent fluid was aspirated and culture sensitivity done. The culture yielded growth of enterococcus species which were sensitive to amoxicillin & clavulanic acid, augmentin, vancomycin, linezolid, amikacin. Patient was then started on IV Amoxycillin 1g + clavulinic acid 200 mg 12th hourly with supportive fluid and analgesic treatment for 7 days with good clinical response. There were no complications during her hospital stay. Patient was on regular follow up with no signs of recurrence.

Discussion

The palatine tonsils are situated at the lateral portions of the oropharynx, each bound by the Anterior (formed by the palatoglossus) and Posterior (formed by the palatopharyngeus) tonsillar pillars. The palatine tonsils are covered by a fibrous sheath of connective tissue laterally and non-keratinized squamous epithelium medially. The medial surface of the tonsil is made up of multiple tonsillar crypts varying from 8-20 in number [2,3].

Intratonsillar abscess formation commonly develops as a sequel of acute follicular tonsillitis. The exact etiology of intratonsillar abscess is obscure. Two major mechanisms postulated in previous studies are extension of a crypt abscess directly into the tonsillar tissue & bacterial seeding into the tonsil through lymphatic or blood borne spread [4].

Michaels and Hellquist suggested that suppurative focus may penetrate inwards potentially leading to the formation of an intratonsillar abscess [5]. Failure of the tonsillopharyngeus muscle to clear debris/food and further localized inflammation are also implicated in some studies [4,6]. In the bacteriology of tonsils, Staphylococcus aureus is the most common pathogen cultured in adults and children; Enterobacter and Escherichia coli in adults; and Streptococcus pyogenes is more prevalent in children [3].

Rapid lymphatic transport from palatine tonsils and the absence of lymphatic valves prior to the capsule may not allow aggregation of bacteria within the tonsillar parenchyma [7]. This may account for the low incidence of ITA and more peritonsillar abscess. Therefore factors which compromise the lymphatic flow may be predisposing factors for ITA, such as dehydration, inflammatory swelling of follicles and previous history of peritonsillar abscess. The incidence of intratonsillar abscess is seen to be about 5% in patients with peritonsillar abscess [4].

Regardless of the mechanisms at play, parenchymal cellulitis in the tonsil is the final result and degree of sepsis and associated factors, as listed above, would probably determine the size and frequency of its occurrence.

This rare entity was first reported in literature by Childs, et al. in 1991, but all the cases had coexisting peritonsillar abscess which is also the case among many other studies [7]. Prevalence of isolated ITA as in our cases is rare and its occurrence, may in fact be higher than reported, as the clinical features are very similar to peritonsillar abscess/peritonsillitis.

Clinically, intratonsillar abscess exhibit palpable tonsilar enlargement, but patients with peritonsillitis/peritonsillar abscess show swollen surrounding tissue, deviated uvula, and have muffled voice [4,8]. In all our cases, clear clinical indication of intratonsillar abscess were seen along with absence of clinical signs such as muffled voice or deviation of uvula or exudates in tonsil and hence a diagnostic CT was not always indicated. CT clinches the diagnosis in times of unclear inference, where ITA in CT scan shows low density ring enhancement within the tonsillar capsule, as depicted in Figure 4, unlike in peritonsillar abscess which shows peritonsillar space involvement [6-8]. Misdiagnosis of intratonsillar abscess may lead to inappropriate treatment and undue complications for eg. if misdiagnosed as peritonsillar abscess, the incision and drainage under antibiotic cover may be excessive and may not facilitate drainage of the intratonsillar abscess.

A recent case series on the cited subject, in children, by Ulualp, et al. has highlighted the role of antibiotics in treatment of ITA with no surgical intervention at all [9]. Clinical response to IV Antibiotic treatment may be determined using the following clinical signs and symptoms: Restitution of general wellbeing, improvement of appetite, improved swallowing, absence of fever, and decline in tonsil size, symmetrical peritonsillar regions with no fullness, normal appearing oropharynx, and decreased trismus. If no clinical improvement is seen after 48-72 hours, surgical intervention could be considered [9].
In our case series however, our first patient came with a month long history during which, she underwent 2 courses of antibiotics as a primary intervention with no improvement in her symptoms and hence we decided on primary incision & drainage followed by antibiotic cover.

Many authors, support needle aspiration under antibiotic cover [10,11]. In our set up we used a wide bore 18 G needle aspiration with post-procedural antibiotic therapy as a primary treatment modality since the procedure was easy, cost effective, and less invasive, avoids the need for a general anaesthesia, and a less painful method while the wide bore needle aids in thorough pus drainage. In children, as standard operating procedure similar to foreign body removal we would prefer to do it under short general anesthesia or sedation followed by post-procedural antibiotics but in this case series all the patients that presented with ITA were adults and hence that was an option we didn’t explore since their compliance for the procedure was excellent.

Post-procedural bleeding is a potential complication of this procedure. However in all our cases, post-procedural bleeding was minimal and subsided spontaneously. Too deep an insertion for drainage can puncture large vessels causing increased bleeding and must be done with utmost care [12-14]. Following the drainage, the pus should be always sent for microscopy, culture, and sensitivity analysis thus antibiotic choice can be directed by the microbes cultured and their sensitivity. Abscess Tonsillectomy may be considered in case of failure of treatment or recurrent abscesses only.

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Conflict of Interest

None.

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