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A review and report of a rare clinical entity: Intratonsillar abscess

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ABSTRACT

Background: Intratonsillar abscess is a rare complication of tonsillitis. The number of reported cases in the literature is scarce. The clinical features can resemble tonsillitis or peritonsillar abscess. Recognition of this as a possible cause is important as management differs. Often imaging is required to make this distinction. The aim of this report is to help provide a comprehensive review of the literature on patients with intratonsillar abscess. In doing so a case is also presented.

Method: Literature review and case review.

Case review: We report the case of a previously well 40 year old man with an intratonsillar abscess. Imaging was required to make the diagnosis and patient was managed with incision and drainage together with empirical intravenous antibiotics.

Conclusion: Intratonsillar abscess is rare. Although the distinction between tonsilitis, intratonsillar abscess and peritonsillar abscess is difficult there are symptoms and signs that may help the clinician make the differentiation. Imaging is often utilised to localise the abscess. To achieve a more rapid recovery procedural management seems to be necessary.

Introduction

Intratonsillar abscesses are a rare complication of a common infection - acute bacterial tonsillitis. The literature reports only 29 cases of intratonsillar abscess. Therefore inferences on the exact incidence are difficult to ascertain and an evidence base is lacking with regards to how best to manage these patients. Importantly, clinical features may resemble tonsillitis or peritonsillar abscess, and imaging may be required to confirm the diagnosis. Management, as with most abscesses consists of incision and drainage and systemic antibiotics. Much less clear is whether a tonsillectomy, either “hot”, or an interval tonsillectomy is required for definitive management. We report the case of a previously well 40 year old man with an intratonsillar abscess. This article is also the first to include a comprehensive review on patients with intratonsillar abscess reported in the literature.

Method

A comprehensive case review was undertaken. This was followed by a literature review. A PubMed search for “intratonsillar abscess” was performed and relevant articles selected. A full test review and reference list review of the relevant articles were then to further identify relevant papers. Each article was then analysed with particular focus on symptomatology, clinical signs, investigations, microbiology, management type and outcomes.

Case presentation

A forty year old gentleman presented to our emergency department with a 2 month history of intermittent sore throat with acute exacerbation 3 days prior to presentation. He was commenced on oral amoxicillin by his general practitioner and presented with worsening dysphagia, odynophagia and trismus. He had a mildly muffled “hot potato” voice but no respiratory compromise. His medical history was unremarkable including no previous episodes of tonsillitis.

His clinical examination revealed asymmetric grade 2 tonsils, without any evidence of palatal or uvular asymmetry or bulge. The tonsils were inflamed with bilateral tonsilloliths, without any obvious gross structural abnormality. Neck examination revealed prominent bilateral cervical lymphadenopathy. Flexible nasendoscopy demonstrated a bulge of his ipsilateral lateral pharyngeal wall with no compromise of his airway and mobile vocal cords.

His white cell count was elevated of 15.3×10^9 with a predominant neutrophilia (11.8×10^9) and a C-reactive protein of 140. Due to concern about deep neck space abscess, computed tomography imaging was obtained in the emergency department prior to otolaryngology

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Fig. 1. CT scan with iodine contrast a) coronal image demonstrating bilateral tonsilloliths and rim-enhancing intratonsillar abscess on left side extending into hypopharynx and b) axial imaging of same patient demonstrates same rim-enhancing left intratonsillar abscess.

consultation. This established the diagnosis of intratonsillar abscess (Fig. 1). Deep space involvement was excluded on the imaging.

Immediate incision and drainage of the offending abscess was performed in the emergency department. After spraying the oral cavity with phenylephrine-lignocaine spray, a wide-bore 16ga cannula was used to localise the abscess with aspiration of 2ml of pus from the left mid-tonsil. Subsequently a scalpel blade was used to create a 3cm vertical incision along the length of the left tonsil, centred on the area of needle localisation. Artery forceps were used to dilate the incision and to express out the residual pus. The patient was then requested to gargle with diluted hydrogen peroxide solution. Intravenous antibiotics (benzyl penicillin and metronidazole) were commenced and continued for 24 hours along with systemic dexamethasone. The patient was successfully discharged the following morning and is doing well on subsequent follow-up. Cytology of the purulent aspirate excluded the presence of malignant or abnormal cells. Microscopy and culture revealed pan-sensitive Haemophilus influenza with mixed oral flora.

Discussion and review of literature

Tonsillitis is a common infection occurring in children and adolescents, but also in adults. Peritonsillar abscess is a well-recognised complication of acute bacterial tonsillitis, whereas intratonsillar abscess is a rarely reported and known clinical entity. The current literature does not provide any new insights on the pathogenesis of intratonsillar abscess and 2 prevailing mechanisms first postulated by Childs et al. [1] are still quoted in the published literature. The first is contiguous involvement of the tonsillar parenchyma in suppuratives inflammation of the tonsillar crypts. Subsequent occlusion of the crypt leads to a contained intratonsillar abscess. The second postulated mechanism is haematogenous or lymphatic spread. Blair et al. [2] examined intratonsillar abscess in 2 cases and found there was erosion of overlying stratified squamous epithelium with sheets of polymorphonuclear cells within the tonsillar crypts. They found deep parenchymal abscess separate to the epithelial changes. They infer that the reason intratonsillar abscess are so rare, is that the normal rapid transit of lymphatic flow within the tonsil of about 30 minutes prevents accumulation of bacteria within the tonsil and hence intratonsillar abscess formation. Alteration in this normal lymphatic transit is therefore thought to cause intratonsillar abscess.

A PubMed search on intratonsillar abscess revealed 13 original articles. Further full-text review yielded 8 relevant articles on intratonsillar abscesses, with a further 2 articles identified on checking reference lists. Including our patient and the total of 10 articles, there were 29 patients, with an age range of 4–50 years with a mean age of 20.3 (SD ± 13.1). There were 18 male patients and 11 female patients. Typical presenting complaint was of sore throat (100%), odynophagia (67.9%), and otalgia (14.3%). Common signs on examination in addition to tonsillar inflammation were tonsillar asymmetry or deviation (79.3%), trismus (35.7%) and cervical lymphadenopathy (44.8%). Voice changes occurred in 17.2% of patients. A minority of patients (6.9%) had evidence of external neck swelling. Bilateral intratonsillar abscesses are reported in three patients. One of these bilateral cases had a history of long-term diabetes mellitus with end-organ and microvascular disease with recurrent sore throats, although the other 2 patients were otherwise fit and well.

Eight patients reported in the literature had concurrent peritonsillar abscess, including the first 7 cases reported in the literature by Childs et al., in 1991 [1]. Childs reported an incidence of about 5% of intratonsillar abscess in tonsillectomy specimens sent on patients with peritonsillar abscess. On exclusion of these patients, the remaining 21 had isolated intratonsillar abscess. Due to the rarity of this clinical entity, the exact incidence is difficult to estimate.

It is difficult to distinguish clinically between tonsillitis, peritonsillar abscess and intratonsillar abscess. All three may present with sore throat, odynophagia with or without referred otalgia. Tonsillitis however is often bilateral where as peritonsillar abscess and intratonsillar abscess are more commonly unilateral and patients report pain to be predominantly single sided. Additionally patients with tonsillitis do not have trismus whereas trismus is a common feature of peritonsillar abscess and present in approximately 35% of reported cases of intratonsillar abscess. Examination of the oropharynx in tonsillitis will likely reveal tonsil hypertrophy with exudate where as in peritonsillar abscess there is soft palate erythema/oedema with or without deviation of the uvula. To distinguish peritonsillar abscess and intratonsillar abscess the later may lack the erythema and proptosis of soft palate, however as previously stated the two may also coexist [1]. Given at times the lack of clinical clarity patients may need imaging to assist in making this distinction.

Most patients underwent CT imaging which confirmed the presence of intratonsillar abscess and at least two studies in the literature report the utility of CT in both diagnosis and localisation of intratonsillar abscess [3,4]. One patient in the series underwent an MRI although the benefit over CT is unclear [5]. Bandarkar [6] also reported on the use of ultrasound to localise abscesses in an emergency department setting, with the finding of intratonsillar hypoechogenicity.

Intratonsillar abscesses like most abscesses are typically polymicrobial, with a mix of aerobic and anaerobic bacteria. Childs [1] found that offending organisms are typical oral flora such as streptococci although anaerobes such as bacteroides and gram negative aerobes such as enterobacter and klebsiella also contribute.