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A Tonsillar Tuberculosis in A Pediatric Patient at the Hospital Center of Soavinandriana, Antananarivo

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ABSTRACT

Introduction: *Tonsillar tuberculosis is an uncommon form of extrapulmonary tuberculosis, especially in children. Clinical manifestations are nonspecific and usually mimic chronic atypical tonsillitis, sometimes associated with cervical lymphadenopathy [3-7]. Diagnosis mainly relies on histopathological examination demonstrating necrotizing granulomatous inflammation.*

Case presentation: *We report the case of a 9-year-old child with no significant medical history who presented with a two-month history of odynophagia and a mildly painful left submandibular swelling. Previous empirical antibiotic treatments failed to improve symptoms. otorhinolaryngology examination revealed bilateral tonsillar hypertrophy without exudate and a mobile, non-inflammatory left submandibular lymph node. Tonsillectomy with lymph node biopsy was performed. Gross examination disclosed caseous areas. Histopathological analysis showed epithelioid and multinucleated giant-cell granulomas associated with caseous necrosis in both tonsillar and nodal specimens, establishing the diagnosis of tonsillar and cervical nodal tuberculosis.*

Conclusion: *Although rare, tonsillar tuberculosis should be considered in any chronic atypical tonsillitis unresponsive to conventional therapy, especially in endemic settings. Histopathological examination of tonsillectomy specimens, possibly complemented by special stains and molecular tests, remains essential for diagnosis.*

Keywords

Caseous necrosis, Epithelioid granuloma, Pathology, Tonsillitis, Tuberculosis.

Introduction

Tuberculosis remains a major global public health problem [1]. In children, it still accounts for a significant proportion of infectious morbidity, including extrapulmonary forms [1,2]. Tonsillar involvement is rare, if not exceptional, particularly in the palatine tonsils [3].

This rarity is thought to be linked to several local protective mechanisms, notably the antiseptic action of saliva, the presence of oral saprophytic flora, and the relative resistance of the tonsillar squamous epithelium to colonization by Mycobacterium tuberculosis [3,4]. In practice, the symptoms are nonspecific and may mimic common chronic tonsillitis or, more rarely, a neoplastic condition [3,5].

The purpose of this report is to describe a pediatric case of tonsillitis tuberculosis and to highlight the role of histopathological examination in diagnosing this unusual site.

Case Report

The patient was a 9-year-old child with no significant past medical history and up-to-date vaccinations. Symptoms had begun two months prior to admission and were characterized by persistent dysphagia associated with a mildly tender swelling in the left submandibular region, with no other functional symptoms reported.

The patient had received several types of antibiotic therapy at home, including amoxicillin, followed by azithromycin and metronidazole, without clinical improvement. A cervical ultrasound performed due to the persistence of symptoms revealed cervical lymphadenopathy, prompting a referral to the Otorhinolaryngology Department at the Soavinandriana Hospital Center (CENHOSOA).

The clinical examination revealed bilateral tonsillar hypertrophy, without a whitish coating or pseudomembrane. There was also a non-inflammatory left submandibular mass, mobile, relative to the deep plane, measuring approximately 2 cm in its longest axis. For diagnostic purposes, a tonsillectomy combined with a lymph node biopsy was performed. Macroscopic examination of the surgical specimens revealed yellowish-whitish areas with a caseous appearance, already suggestive of caseous necrosis.

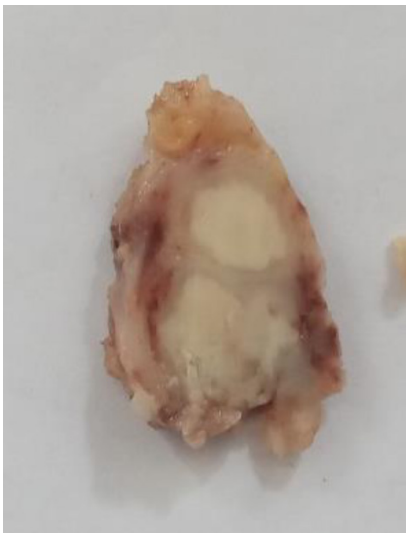

Figure 1: Palatine tonsil: macroscopic appearance of caseous necrosis in the section.
Source: Pathology Laboratory, Hospital Center of Soavinandriana (CENHOSOA).

On histological examination, the specimen showed tonsillar tissue extensively altered by caseous necrosis associated with Langhans-type epithelioid and giant-cell granulomas. Lesions of the same nature were also observed in the lymph node. All these features led to a diagnosis of tonsillar tuberculosis associated with cervical tuberculosis lymphadenopathy.

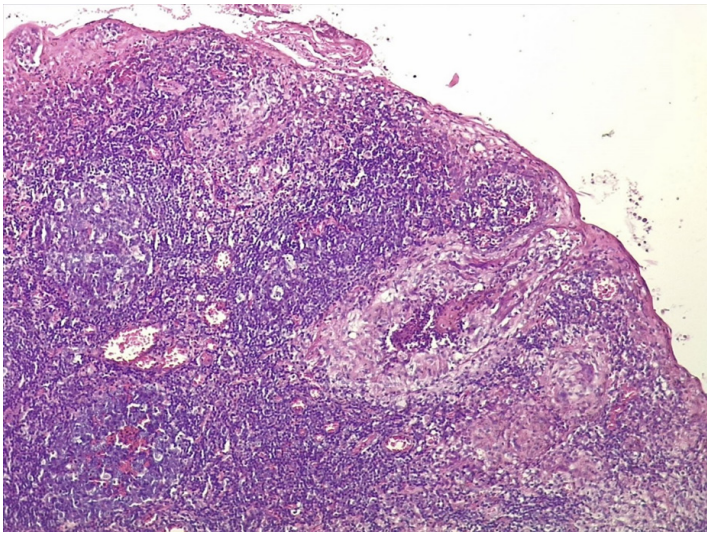

Figure 2 : Palatine tonsil : Epithelioid and giant-cell granuloma (1) lined by the squamous épithelium (2) of the tonsil palatine, Hemalun-Eosin X 20 magnification.
Source: Pathology Laboratory, Hospital Center of Soavinandriana (CENHOSOA).

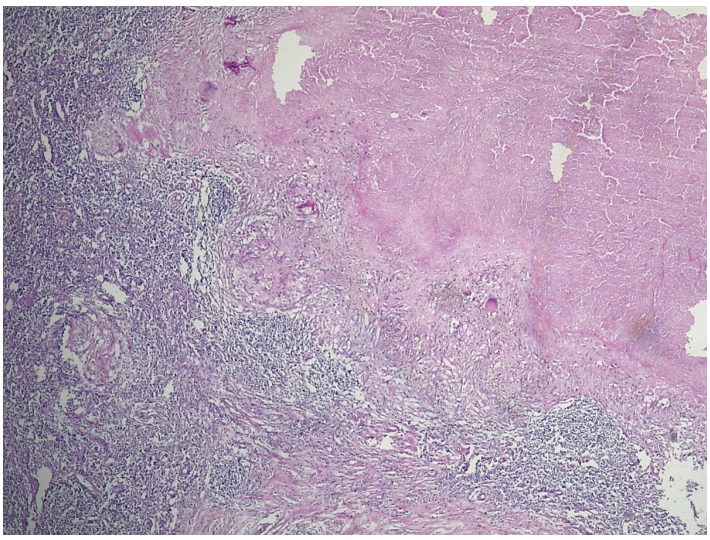

Figure 3: Palatine tonsil: Epithelioid and giant cell granuloma (2) surrounding the caseous necrosis (2), Hemalun-Eosin X 10 magnification.
Source: Pathology Laboratory, Hospital Center of Soavinandriana (CENHOSOA).

Discussion

Tuberculosis of the palatine tonsils is a rare form of tuberculosis affecting the otorhinolaryngology region [3]. It can be primary or secondary to a tuberculous focus, most commonly pulmonary [3,4,6]. In children, extrapulmonary forms, particularly lymph node involvement, play a significant role in the clinical presentation of the disease. Cervical tuberculous lymphadenitis is considered one of the most common forms of extrapulmonary tuberculosis in pediatrics. The presence of a minimally inflammatory, mobile,

and chronic cervical mass, associated with persistent symptoms, strengthens the diagnostic probability of associated lymph node tuberculosis [1,2,7].

Clinically, tonsillar tuberculosis most often presents with chronic odynophagia, dysphagia, unilateral or bilateral tonsillar hypertrophy, sometimes ulceration, and frequently associated cervical lymphadenopathy [3,8]. In this case, the prolonged evolution, the failure of standard antibiotic therapy, and the association with submandibular lymphadenopathy should prompt an etiological investigation to consider a specific etiology, particularly tuberculosis.

The key contribution of this case lies in the pathological findings. Macroscopically, the presence of caseous areas already suggested a tuberculous etiology, although this is not pathognomonic [3,6,8]. Histologically, the classic lesion is a necrotizing granulomatous inflammation, consisting of epithelioid granulomas, multinucleated Langhans-type giant cells, and central caseous necrosis [3,6]. In otorhinolaryngology forms, this histological appearance is often the primary diagnostic indicator, especially when specimens are paucibacillary [6,8].

Direct visualization of acid-fast bacilli by Ziehl-Neelsen staining is possible, but its sensitivity remains inconsistent in otorhinolaryngology sites. Thus, the absence of visible bacilli does not rule out the diagnosis when the lesion architecture is typical and the clinical and epidemiological context is consistent [6,8]. This test was not performed in this case.

From a differential diagnostic perspective, any case of tonsillar granulomatosis should prompt consideration of other infectious or inflammatory causes. The main diagnoses to rule out are sarcoidosis, Crohn's disease, deep fungal infections, actinomycosis, toxoplasmosis, as well as certain lymphoid proliferations or epithelial neoplasms accompanied by a granulomatous reaction [9,10]. The presence of caseous necrosis is therefore a strong indicator of tuberculosis; however, this does not preclude, whenever possible, completing the evaluation with microbiological and molecular tests [6,8,11].

In our case, the combination of tonsillar and lymph node involvement, with concordant necrotizing granulomatous lesions at both sites, and the endemic nature of tuberculosis in Madagascar considerably reinforce the diagnostic value of histological examination. Histological examination was the key factor in establishing a definitive diagnosis.

Once confirmed, management relies on antituberculosis treatment. In children, current WHO recommendations advocate a standard six-month course of treatment for most susceptible extrapulmonary forms, with the exception of certain specific locations [2].

Conclusion

Tuberculosis of the tonsils in children is a rare condition, but it should be considered in any case of atypical, persistent, or treatment-resistant chronic tonsillitis, especially in areas where tuberculosis is endemic. Pathological examination of the tonsillectomy specimen remains the key step in diagnosis, revealing epithelioid and giant-cell granulomatous inflammation with caseous necrosis. This finding thus underscores the fundamental role of histopathology in the diagnosis of unusual otorhinolaryngology forms of tuberculosis.

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