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Tuberculosis in a Thyroglossal Duct Cyst: A Rare Case and Literature Review

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Abstract | **Case Report**

The thyroglossal duct cyst (TGDC) represents the most frequent congenital anomaly of the midline neck. Although typically associated with benign complications, the occurrence of a tuberculous infection within a TGDC constitutes an exceedingly rare clinical presentation. We report a case of TGDC infected by Mycobacterium tuberculosis, confirmed through histopathological analysis following surgical excision via the Sistrunk procedure. Antituberculous therapy was initiated in accordance with national treatment guidelines for extrapulmonary tuberculosis. This case underscores the importance of considering tuberculosis in the differential diagnosis of atypical or persistent midline cervical masses, especially in endemic areas. Definitive diagnosis relies on histopathological confirmation, and optimal management requires a combination of surgical intervention and appropriate medical therapy. Despite its rarity, tuberculosis involving a TGDC should remain a diagnostic consideration in cases of infected neck masses. A multidisciplinary approach is essential for effective diagnosis and treatment.

Keywords: cervical mass, head and neck tuberculosis, extrapulmonary tuberculosis, mycobacterium tuberculosis, thyroglossal duct cyst.

INTRODUCTION

The thyroglossal duct cyst (TGDC) is the most frequent congenital anomaly of the midline neck, resulting from incomplete involution of the thyroglossal duct, an embryological remnant of thyroid migration [1,2]. Clinically, TGDCs usually present as soft, mobile, and painless anterior neck masses that characteristically move with swallowing and tongue protrusion [2]. While bacterial superinfection remains the most commonly reported complication, rarer events such as malignant transformation [3] and, in exceptional cases, infection with Mycobacterium tuberculosis have been described. Extrapulmonary tuberculosis accounts for approximately 15-20% of all tuberculosis cases and can affect virtually any anatomical site. Despite their distinctive clinical features, cervicofacial manifestations remain uncommon [4]. Tuberculous involvement of a TGDC is an exceedingly rare entity, scarcely reported in the literature and poorly characterized to date [5,6]. In this article, we present a unique case of TGDC associated with tuberculous infection. We describe its clinical, radiological, and histopathological characteristics and discuss the therapeutic approach in light of current evidence from the literature.

CASE PRESENTATION

A 28-year-old male with no significant medical history or known exposure to tuberculosis presented with a midline neck swelling evolving over six months. He reported a progressive increase in the size of the mass, without associated pain or systemic symptoms such as fever, night sweats, or weight loss. There was no recent upper respiratory tract infection. Clinical examination revealed a firm, midline, subhyoid oval mass approximately 3 cm in diameter, mobile with swallowing and tongue protrusion. No overlying inflammatory signs or palpable cervical lymphadenopathy were noted. The ENT examination was otherwise unremarkable. Cervical ultrasound demonstrated a well-defined, hypoechoic cystic lesion measuring 39 × 28 mm in the midline suprahyoid region, suggestive of a TGDC. The patient underwent cervical surgical excision via the Sistrunk procedure (Figure 1). The surgery involved en bloc resection of the cyst, its tract, and the central portion of the hyoid bone (Figure 2).

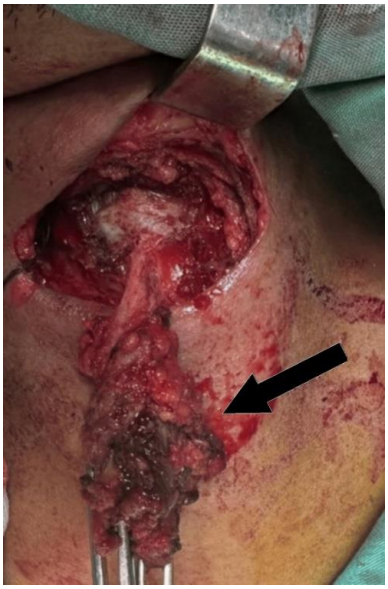

Figure 1: Intraoperative view showing excision of a thyroglossal duct cyst (Arrow) via the Sistrunk procedure

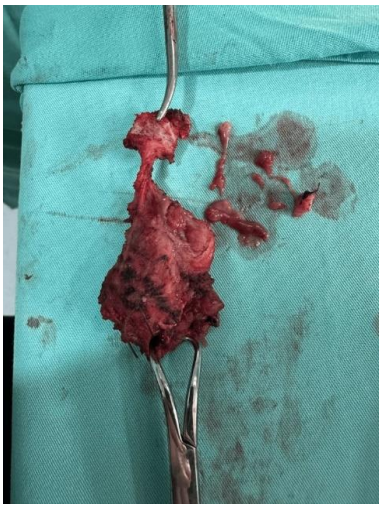

Figure 2: Intraoperative view showing a well-defined thyroglossal duct cyst

Histopathological examination of the surgical specimen revealed granulomatous inflammation with epithelioid and giant cells associated with caseating necrosis, consistent with tuberculous infection (Figure *3*). Direct examination and culture of the tissue confirmed the presence of Mycobacterium tuberculosis. Extension workup, including chest radiography, tuberculin skin testing (TST), and sputum analysis, showed no evidence of pulmonary or lymphatic involvement.

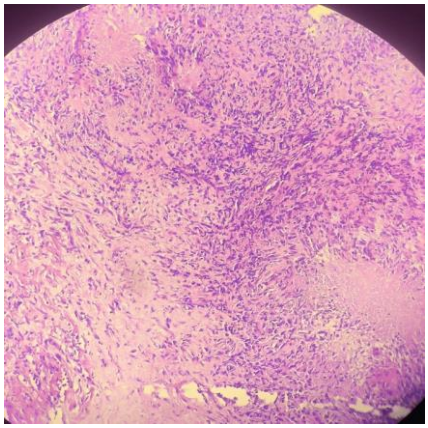

Figure 3: Histological image showing a tuberculous granuloma with caseating necrosis (H&E stain, high magnification)

The patient was started on standard antituberculous therapy with rifampicin, isoniazid, pyrazinamide, and ethambutol for two months, followed by continuation with rifampicin and isoniazid for four months, in accordance with national guidelines for extrapulmonary tuberculosis. Clinical evolution was favorable, with no recurrence or complications observed after 12 months of followup. The patient was regularly monitored through ENT and pulmonology consultations.

DISCUSSION

The TGDC is the most common congenital midline cervical anomaly and is due to the persistent embryonic thyroglossal duct [1]. Clinically, it typically presents as a painless midline neck swelling which is mobile with swallowing and tongue protrusion [2]. The most common complications are secondary bacterial infection and fistula formation, while the rarest complications are malignant transformation, or specific infections such as tuberculosis, which have only occasionally been reported [3].

Extrapulmonary tuberculosis comprises 15-20% of cases of tuberculosis [4]. Tuberculous infection of the TGDC is an exceptionally rare pathology, with very little description in the literature. To date, Rubin et al. (1980) reported the only reported case of TB of a TGDC [5,6]. Potential routes of contamination could be via hematogenous or lymphatic spread or local spread from an undetected adjacent focus [7].

In endemic regions, tuberculosis can present in a variety of cervicofacial forms. Tuberculous lymphadenitis is the most common form, with cold abscesses - which can develop in various cervical spaces - being the second most common [8]. Differential diagnoses of cystic cervical masses include dermoid cysts, epidermoid cysts, ranulas, and lymphangiomas [8]. Isolated reports also exist of tuberculosis of the thyroid gland, although this location remains rare and exceptional [9].

Imaging using ultrasound, CT or MRI is useful for accurate localization of lesions and therefore provides a backdrop for diagnosis, although it is not diagnostic. Definitive diagnosis has to come from a histopathological evaluation which will show epithelioid and giant cell granulomas with caseating necrosis - the diagnostic hallmarks of tuberculosis [10].

The mainstay of TGDC management is surgical excision of the remnant TGDC using a variant of the Sistrunk procedure, which remains the gold standard of therapy. The Sistrunk procedure removes the cyst, duct tract, and central segment of hyoid bone, which decreases the risk of recurrence [1,11]. In the event where tuberculous infection is involved, conventional anti-tuberculous treatment is instituted for six months or according to national guidelines on extrapulmonary forms [12]. It is shown that medical treatment alone, is usually adequate to control the infection. However, surgical drainage or excision may be needed if the abscess is large [9], if draining/evacuation of abscess is favourable in your local guidelines.

This case demonstrates the need for tuberculosis to be considered in the differential diagnosis of atypical neck masses especially in areas of endemic tuberculosis or when the histopathology suggests a granulomatous disease. Long term surveillance is important to monitor for recurrence and to assess for possible other tuberculous localizations.

CONCLUSION

Although rare, tuberculosis in a thyroglossal duct cyst is a clinically relevant entity that should not be overlooked, particularly in endemic regions. It should be considered in the differential diagnosis of midline cervical masses with atypical progression. Diagnosis relies on histopathological analysis, and management combines surgical excision using the Sistrunk technique with appropriate antituberculous therapy. This approach ensures complete recovery and minimizes the risk of recurrence, highlighting the importance of long-term follow-up and screening for associated tuberculous localizations.

REFERENCES

1. Righini C-A, Hitter A, Reyt E, Atallah I: Surgery of the thyroglossal duct tract: the Sistrunk technique. Annales Françaises d'Oto-Rhino-Laryngologie et de Pathologie Cervico-Faciale. 2016, 133:79-83. 10.1016/j.aforl.2015.09.003
2. Mondin V, Ferlito A, Muzzi E, et al.: Thyroglossal duct cyst: personal experience and literature review. Auris Nasus Larynx. 2008, 35:11-25. 10.1016/j.anl.2007.06.001
3. Patel SG, Escrig M, Shaha AR, et al.: Management of well-differentiated thyroid carcinoma presenting within a thyroglossal duct cyst. J Surg Oncol. 2002, 79:134-9. 10.1002/jso.10059
4. Sharma SK, Mohan A: Extrapulmonary tuberculosis. Indian J Med Res. 2004, 120:316-53.
5. Sathish C, Nyamannawar BM, Mohanty S, Correa MMA, Das K: Atypical thyroglossal duct anomalies. Int J Pediatr Otorhinolaryngol. 2008, 72:1353-7. 10.1016/j.ijporl.2008.05.020
6. Rubin AM, Brondbo K, Alberti PW, et al.: Head and neck manifestations of tuberculosis in the absence of pulmonary disease. J Otolaryngol. 1982, 11:385-90.
7. Golden MP, Vikram HR: Extrapulmonary tuberculosis: an overview. Am Fam Physician. 2005, 1:1761-8.
8. Jha A, Lamichhane S, Jha S: Cold abscess in neck masquerading as infected thyroglossal cyst: a case report. Nepal J Radiol. 2021, 11:52-5. 10.3126/njr.v11i2.40108

9. Kamil HSA, Muthukumar S, Jayakumar P, Latha D, Karunakaran K, Adharshkumar M: An infection burden on thyroid (tuberculosis of thyroid): a case report. World J Endocr Surg. 2020, 12:27-9. 10.5005/jp-journals-10002-1270
10. Ketata W, Rekik WK, Ayadi H, Kammoun S: Extrapulmonary tuberculosis. Revue de Pneumologie Clinique. 2015, 71:83-92. 10.1016/j.pneumo.2014.04.001
11. Dbab L, Nouri H, Iguelouane N, Rochdi Y, Aderdour L, Raji A: Papillary carcinoma arising in a thyroglossal duct cyst: report of two cases. The. Pan African Medical Journal. 2015, 22:105. 10.11604/pamj.2015.22.105.7006
12. Ministry of Health and Social Protection. National guidelines for the diagnosis and management of extrapulmonary tuberculosis. Rabat: Ministry of Health and Social Protection. August. 2023