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A B S T R A C T

Tuberculosis remains the highest cause of infection-related mortality in low- and middle-income countries [1]. Extra-pulmonary tuberculosis is often misdiagnosed because of the nonspecific clinical presentations and gaps in the laboratory assessment [2]. Delayed and misdiagnosis can cause increased risks of morbidity and potential community transmission. Primary thyroid tuberculosis is very rare presentation even in the endemic area. We presented a Case Illustrated of a patient with cold abscess as a primary presentation of thyroid tuberculosis. Difficulty in the diagnosis and treatment were described. Although very rare, atypical presentation of extra-pulmonary tuberculosis in the thyroid gland requires thorough anamnesis and in-depth examination. Clinicians should put high-index suspicion on high-risk patients from endemic areas with medical comorbidity including immunocompromised disease and poor nutritional status. Our report underlines the importance of thorough medical assessment for unusual presentation of thyroid tuberculosis.

Cold abscess as a primary manifestation of thyroid tuberculosis

Sumadi Lukman Anwar a,*, Artanto Wahyono a, Ery Kus Dwianingsih b, Widya Surya Avanti c

a Division of Surgical Oncology, Dr. Sardjito Hospital/Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta 55281, Indonesia
b Department of Pathological Anatomy, Dr. Sardjito Hospital/Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta 55281, Indonesia
c Department of Radiology, RSUD Wates (Wates General Hospital), Kulon Progo 56651, Indonesia

A thin 16-year-old female was referred to the clinic due to mass swelling in her neck that progressed to include skin ulcerations and dysphagia. Physical examination revealed skin ulcerations with reddish bases and a tendency to bleed and enlargement of the left thyroid lobe with irregular borders, tender, and a size of 3x2x2 cm. No signs and symptoms of hyperthyroidism were observed. Ultrasonography showed multiple hypo-echoic lesions with poorly defined borders. Needle biopsy demonstrated predominant inflammatory cells without malignant cells. Computed tomography-scan revealed amorphous hypo-dense lesions with gas bubbles and extension to the subcutaneous tissues. Debridement and left thyroid lobectomy were performed. Histopathology revealed granulomas with multi-nucleated giant cells of the Langhans type. Acid Fast Bacteria (AFB) staining and rapid culture tests were performed and confirmed the diagnosis of mycobacterium tuberculosis infection. The patient responded to antituberculous drugs showing skin wound healing after six months of treatment.

Thyroid tuberculosis is uncommon probably due to the antibacterial properties of colloids within the thyroid follicles and high vascularization of the gland [3]. Diagnosis of thyroid tuberculosis is often missed or delayed due to unspecific signs and symptoms and presents in various clinical manifestations including single or multifocal nodules, chronic sinuses, goiter with caseation, chronic fibrosing nodules, and cold or acute abscess [3,4]. In some circumstances, it can mimic thyroid cancer with some mechanical obstruction signs including hoarseness or dysphagia as shown in our case. Ultrasonography-guided fine-needle aspiration biopsy is appraised as an important procedure to assist the diagnosis for detailed examination of cytology and AFB culture [3–5]. Although antituberculous therapy remains the mainstay treatment, surgery is still often performed to facilitate abscess drainage and to prevent total destruction of the thyroid tissue [3–5]. Failure to respond to antituberculous drugs and recurrence occur in around 1% of cases due to multi-drug resistance [3]. Although very rare, atypical presentation of extra-pulmonary tuberculosis in the thyroid gland requires thorough anamnesis and in-depth examination. Clinicians should

* Correspondence to: Division of Surgical Oncology - Department of Surgery, Dr. Sardjito Hospital/Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Jl. Kesehatan No. 1, Yogyakarta 55281, Indonesia.
E-mail address: sl.anwar@ugm.ac.id (S.L. Anwar).

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put high-index suspicion on high-risk patients from endemic areas with medical comorbidity including immunocompromised disease and poor nutritional status. Our report underlines the importance of thorough medical assessment for unusual presentation of thyroid tuberculosis (Figs. 1 and 2).

Declarations

Sources of funding

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Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient and her parents for reporting the medical imagery and displaying the relevant de-identified images.

Provenance and peer review

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Authors’ statement

SLA, AW conceptualized the report, produce the imaging, and finalized the manuscript. EKD and WSA provided and gave expertise in the imaging and histopathology. All authors read, provided feedback, and approved the final manuscript.

Conflict of interest

All authors disclose that there is no potential conflict of interest.

Data availability

The clinical and imaging data supporting the analysis and findings of this study will be available from the corresponding author upon reasonable request.

References

[1] Centis R, D’Ambrosio L, Zumla A, Migliori GB. Shifting from tuberculosis control to elimination: where are we? What are the variables and limitations? Is it achievable? Int J Infect Dis 2017;56. https://doi.org/10.1016/j.ijid.2016.11.416.
[2] Hussein M, Abdelhadi A, Elarabi A, Rashid I, Alabbas A, Aladab A. Extrapulmonary tuberculosis masquerading as chest wall malignancy: just never ceases to surprise! IDCases 2021:24. https://doi.org/10.1016/j.idcr.2021.e01114.
[3] Bulbuloglu E, Cirilik H, Okur E, Ozdemir G, Ezberci F, Cetinkaya A. Tuberculosis of the thyroid gland: review of the literature. World J Surg 2006;30. https://doi.org/10.1007/s00268-005-0139-1.
[4] Alam MA, Ahmed MN, Khan AH, Arafat SM. Metastatic tuberculous abscess: a rare manifestation of cutaneous tuberculosis. IDCases 2021:26. https://doi.org/10.1016/j.idcr.2021.e01257.
[5] Kataria SP, Tanwar P, Singh S, Sanjay K. Primary tuberculosis of the thyroid gland: a case report. Asian Pac J Trop Biomed 2012;2(10):839-40. https://doi.org/10.1016/S2221-1691(12)60240-8.