

CASE REPORT

Open Access



Thyroid abscess in a human immunodeficiency virus-infected patient

I. Damoune^{1*}, F. Akioud², K. Cherrabi³, O. Benhommad³ and F. Ajdi¹

Abstract

Background: Thyroid abscess is a rare entity and occurs in patients in a particular situation either in an immunocompromised patient or on tuberculosis infection since the African countries are still tuberculosis endemic countries

Case presentation: We report the case of a 38-year-old female patient who has a thyroid abscess caused by *Citrobacter* which is a rare germ. Screening for human immunodeficiency virus (HIV) was positive for HIV infection.

Conclusions: Screening for HIV and other causes of immunosuppression should be considered in any patient with thyroid abscess.

Keywords: Thyroid abscess, HIV, *Citrobacter*, Immunodeficiency

Background

Thyroid abscess is a rare entity and occurs in patients in a particular situation [1], either in an immunocompromised patient or in a tuberculosis infection since Morocco and African countries are still tuberculosis-endemic countries [2]. We will report the case of a patient who presented with a thyroid abscess associated with an HIV infection.

Case presentation

A 38-year-old female with no previous medical history, no previous goiter, who presented a cervical pain and tumor that had been evolving for several days. On examination, the patient had a fever at 38 °C, tachycardia at 110 bpm, on cervical examination: goiter on the right lobe, very painful on palpation, and hard consistency with inflammatory signs (red and warm) (Fig. 1).

The biological workup showed an inflammatory syndrome: high CRP at 130 mg/l, leukocytes at 7890/mm³, and TSH low at 0.05 mUI/ml

The cervical ultrasound showed an aspect in favor of thyroid abscess completed by a CT scan which showed an enlarged thyroid with a collection at the expense of the right thyroid lobe measuring 43 × 36 × 24 mm (Fig. 2).

The ultrasound-guided fine-needle aspiration with a cytobacteriological study of the pus showed direct examination, no germ in favor of a tuberculosis infection and identification of *Citrobacter*.

The screening for human immunodeficiency virus was positive for HIV infection, and the patient had no other symptoms of HIV infection.

The patient was put on antibiotics, and the abscess was fistulized to the skin (Fig. 3) completed by a surgical drainage. (There is no photo after completed healing.)

Discussion

Thyroid abscess is an extremely rare pathological entity, representing only 0.1% of surgical thyroid pathologies. It is an unusual situation due to the anatomical and physiological characteristics of the gland which gives it a capacity of resistance towards infection [3].

The frequency of this entity is high in the population with immunodeficiency, such as HIV infection, patients receiving chemotherapy, corticosteroids, and transplanted subjects [4]. Our patient was HIV positive.

*Correspondence: ikramdamoune@gmail.com

¹ Faculty of Medicine, Agadir University Ibn Zohr, 80000 Agadir, Morocco
Full list of author information is available at the end of the article



Fig. 1 Goiter with thyroid abscess

Clinically, thyroid abscess presents as a painful cervical swelling. Associated signs are dyspnea, hoarseness, dysphonia, dysphagia, and fever [5]. Biologically, there is an inflammatory syndrome with increased CRP, hyperleukocytosis as in our patient's case.

Thyroid function in patients with thyroid abscesses is usually not affected. However, transient thyrotoxicosis secondary to disruption of thyroid follicles and release of preformed thyroid hormones may occur; this mechanism is similar to thyrotoxicosis in patients with subacute thyroiditis [6]. Our patient presented with hyperthyroidism with a suppressed TSH.

The etiologies of thyroid abscesses are multiple; streptococcal and staphylococcal infections are very frequent and represent 70% of cases [7]. However, other germs have also been reported in the literature. Mycobacteria, although rare, exist and are reported in the literature. Their localization in the thyroid represents 0.1 to 0.4% of all tuberculosis localizations and are usually multiple simulating a multinodular goiter [8]. In our case, the germ identified on the pus culture was *Citrobacter* which is a gram-negative bacterium that occurs mainly in immunocompromised patients. Infections due to this pathogen are relatively rare [9].

Ultrasound and cervical CT scan are the examination of choice in the study of the structure of the abscess, the number of compartments, its size, and its reports to adjacent anatomical structures, particularly with the vascular-nervous bundle of the neck and the upper airways [10].

The diagnosis is confirmed by fine-needle aspiration which brings pus. The cytobacteriological study allows the isolation of the causal germ and the study of its sensitivity to antibiotics.

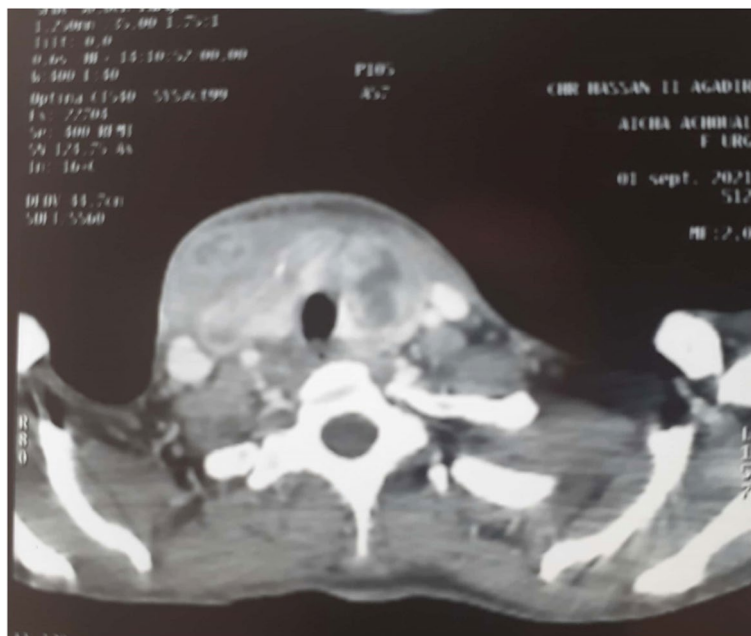


Fig. 2 Cervical CT scan showing thyroid abscess



Fig. 3 Thyroid abscess after draining

The treatment is based on draining of the abscess with appropriate antibacterial therapy. If left untreated, the thyroid abscess can have unfortunate consequences on the surrounding organs. It can result in the destruction of the thyroid glandular parenchyma and parathyroids, a thrombophlebitis of the jugular vein. Fistulization of the abscess in the esophagus or in the tracheal lumen, external fistulization to the skin. Sepsis and blood dissemination to distant organs [11].

Among the opportunistic infections associated with the acquired immunodeficiency syndrome (AIDS), cryptococcosis and tuberculosis are the most common life-threatening infection [7]. In the literature, we found a case of *Salmonella* thyroid abscess in human immunodeficiency virus-positive man [7] and a case of concomitant tuberculous and cryptococcal thyroid abscess in a human immunodeficiency virus-infected patient [1].

Conclusions

Thyroid abscess is a rare entity and occurs in a particular context of immunosuppression. The diagnosis is often made by ultrasound and pus puncture. Treatment is based on drainage and antibiotics. Screening for HIV and other causes of immunosuppression should be considered in any patient with a thyroid abscess.

Abbreviations

HIV: Human immunodeficiency virus; CRP: C-reactive protein; TSH: Thyroid-stimulating hormone; CT scan: Computerized tomography scan.

Acknowledgements

None.

Authors' contributions

ID, write the manuscript and analyze the data. FA, collected the patient data. KC, made the thyroid abscess draining. OB, made the thyroid abscess draining. FA, co-write the manuscript. All authors conceptualized and wrote the paper and revised the text. The authors read and approved the final manuscript.

Funding

None.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author.

Declarations

Ethics approval and consent to participate

Ethics approval was not required for this study in our country Morocco because it is a case report with no experimental study

Consent for publication

Patient informed and consent for publication obtained including images with written consent

Competing interests

The authors declare that they have no competing interests.

Author details

¹Faculty of Medicine, Agadir University Ibn Zohr, 80000 Agadir, Morocco.

²Endocrinology Department, CHU Souss Massa Agadir, 80000 Agadir, Morocco.

³Otolaryngology Department, CHU Souss Massa Agadir, 80000 Agadir, Morocco.

Received: 22 June 2022 Accepted: 5 August 2022

Published online: 04 September 2022

References

- Kiertiburanakul S, Sungkanuparph S, Malathum K, Prachartam R (2003) Concomitant tuberculous and cryptococcal thyroid abscess in a human immunodeficiency virus-infected patient. *Scand J Infect Dis* 35(1):68–70. <https://doi.org/10.1080/0036554021000026991>
- Sadeq M, Bourkadi JE (2018) Spatiotemporal distribution and predictors of tuberculosis incidence in Morocco. *Infect Dis Poverty* 7(1):43. <https://doi.org/10.1186/s40249-018-0429-0>
- Schweitzer VG, Olson NR (1981) Thyroid abscess. *Otolaryngol Head Neck Surg* 89(2):226–229. <https://doi.org/10.1177/019459988108900216>
- Herndon MD, Christie DB, Ayoub MM, Duggan AD (2007) Thyroid abscess: case report and review of the literature. *Am Surg* 73(7):725–728 PMID: 17674951
- Gan YU, Lam SL (2004) Imaging findings in acute neck infection due to pyriform sinus fistula. *Ann Acad Med Singap* 33(5):636–640 PMID: 15531961
- Paes JE, Burman KD, Cohen J, Franklyn J, McHenry CR, Shoham S, Kloos RT (2010) Acute bacterial suppurative thyroiditis: a clinical review and expert opinion. *Thyroid*. 20(3):247–255. <https://doi.org/10.1089/thy.2008.0146>
- Kazi S, Liu H, Jiang N, Glick J, Teng M, LaBombardi V, Szporn AH, Chen H (2015) *Salmonella* thyroid abscess in human immunodeficiency virus-positive man: a diagnostic pitfall in fine-needle aspiration biopsy of thyroid lesions. *Diagn Cytopathol* 43(1):36–39. <https://doi.org/10.1002/dc.23117>
- Siddiqui N, Deletic N, Raal F, Mohamed F (2021) Acute suppurative thyroiditis secondary to *Escherichia coli* infection. *Eur J Case Rep Intern Med* 8(11):003009. https://doi.org/10.12890/2021_003009
- Lin SY, Ho MW, Yang YF, Liu JH, Wang IK, Lin SH, Huang CC (2011) Abscess caused by *Citrobacter koseri* infection: three case reports and a literature review. *Intern Med* 50(12):1333–1337. <https://doi.org/10.2169/internalmedicine.50.4962>

10. Boyce G, Sathisvram P, Miller F (2009) Multinodular goitre complicated by abscess due to *E. coli*. *ANZ J Surg* 79(12):948–949. <https://doi.org/10.1111/j.1445-2197.2009.05151>
11. Jacobs A, Gros DA, Gradon JD (2003) Thyroid abscess due to *Acinetobacter calcoaceticus*: case report and review of the causes of and current management strategies for thyroid abscesses. *South Med J* 96(3):300–307. <https://doi.org/10.1097/01.SMJ.0000051200.55168>

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► [springeropen.com](https://www.springeropen.com)