

A Rare Thyroid Gland Emergency: Thyroid Abscess

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Abstract

Introduction: Thyroid abscess is a serious head and neck infection that may easily be overlooked. It is a rare disease with serious complications when the diagnosis is delayed. In this paper, we present a case of thyroid abscess who presented with fever, fatigue, neck pain and swelling, and rapidly deteriorated general condition.

Case Report: A 28-year-old female patient had painful swelling and redness on the left side of the neck. She had fever, fatigue, and dysphagia. Laboratory tests revealed leukocytosis, elevated CRP, and sedimentation rate. The patient who was detected to have thyroid abscess on ultra-sonography and computed tomography was discharged with recovery through surgery and appropriate antibio-therapy.

Conclusion: Thyroid gland abscess is a rare, serious clinical condition with high morbidity and mortality. Thyroid abscess should be kept in mind while performing radiological evaluation in cases presenting with swelling and redness in the neck. In these cases, quite good clinical outcomes may be achieved with early diagnosis and appropriate treatment.

Key words: Thyroid, abscess, emergency

Introduction

Thyroid abscess is a rare infection of the head and neck region that can cause serious complications¹. It frequently develops following acute suppurative thyroiditis that does not respond to treatment. The most common causative agent is *Staphylococcus aureus*². Since the clinical findings of thyroid abscess are nonspecific, it may be overlooked or its diagnosis may be delayed. Radiological examinations are extremely helpful in diagnosis and treatment. Therefore, thyroid abscess which is rare but may have fatal complications should be kept in mind in suspected patients and radiological findings should be evaluated in this respect.

Case Report

A 28-year-old female patient presented with fever, fatigue, neck pain, swelling and dysphagia for 3 days. Her fever was 38.2°C. She had tachycardia and dyspnea. She did not have any known disease. On physical examination, there was

painful swelling and redness in the area corresponding to the left lobe of the thyroid. Laboratory tests revealed leukocytosis, CRP and high sedimentation. Thyroid function tests were within normal limits. The patient with prominent dyspnea was performed ultra-sonography. A thick-walled cystic lesion with echogenic content was observed (Figure 1). When evaluated together with the current clinical findings and ultra-sonography, the patient, who was thought to have thyroid abscess was performed neck computed tomography (CT) in order to evaluate the surrounding soft tissues and abscess spread. CT examination revealed an area of hypodense abscess in the left lobe of the thyroid gland, containing air and extending towards the mediastinum (Figure 2, 3). There was significant inflammation in the adjacent soft tissues. So the patient underwent immediate surgery and operative abscess drainage and left lobectomy were performed. *Staphylococcus aureus* grew in blood and abscess cultures. Histopathological examination revealed the abscess cavity and surrounding benign thyroid tissue. There were no signs of malignancy. The patient was discharged with full recovery after 14 days of antibiotic treatment.

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Received: 22.01.2020 • **Accepted:** 27.01.2021

DOI: 10.33706/jemcr.844983

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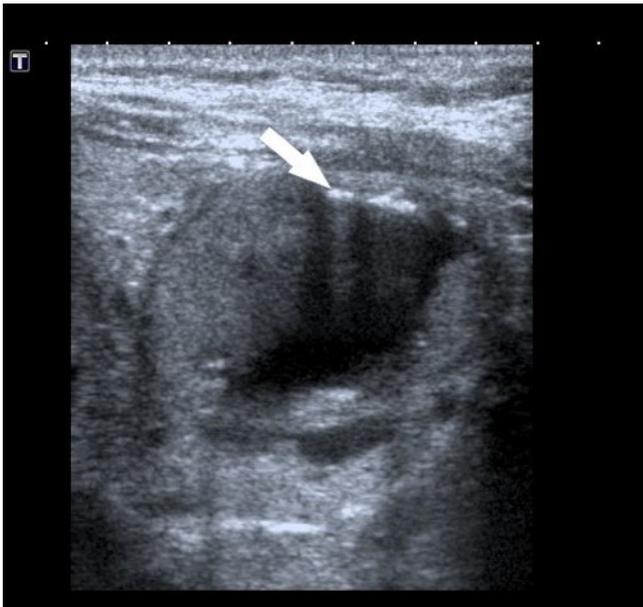


Figure 1. On cervical ultra-sonography, there was a thick-walled cystic lesion with echogenic air values in the anterior of the left lobe of the thyroid gland.

Discussion

Acute suppurative thyroiditis is a rare form of thyroid gland infections with microbial origin¹. If the infection is left untreated, it may rarely progress to thyroid abscess³. It frequently develops after acute suppurative thyroiditis following upper respiratory tract infection and middle ear infection⁴. Staphylococcus and streptococcus species are the most common causative microorganisms. Staphylococcus aureus grew in the blood and abscess cultures of our case. Other agents are gram-negative microorganisms, anaerobes and fungi².

It has been reported that thyroid gland is more common in women than in men and is frequently located on the left

side of the thyroid gland⁵. In our case, there was an abscess located in the left lobe of the thyroid gland.

The thyroid gland is resistant to infections due to its good blood supply, good lymphatic drainage, high iodine content with bactericidal effect, and a robust capsule that provides good separation from surrounding neck structures⁶. The source of infection is thought to be mostly hematogenous⁷. Acute suppurative thyroiditis and thyroid gland abscess are mostly seen in immune-compromised patients, diabetics, and patients with congenital pathologies such as priform sinus fistula. It can also occur after fine needle aspiration biopsy^{3,5}. Our case did not have any systemic disease.

Anamnesis, physical examination, laboratory and radiological examinations are extremely important in the diagno-



Figure 2. In axial neck CT image, the density of the left lobe of the thyroid gland was decreased and hypodense abscess containing air value was observed.



Figure 3. Inferiorly, this abscess area and air values were observed to extend towards the thoracic entrance

sis of the disease. Symptoms include fever, neck pain, swelling, redness and dysphagia. These clinical findings can be easily overlooked by mimicking acute pharyngitis and the diagnosis may be delayed. Laboratory findings include leukocytosis, CRP and increased sedimentation. Thyroid function tests are mostly normal. However, cases of thyro-toxicosis and hypothyroidism developing secondary to thyroid abscess have also been reported in the literature⁸. Thyroid functional tests of our case were within normal limits.

Direct graphy reveals deviation in trachea and increased soft tissue density at this level. The solid or cystic structure of the lesion and the surrounding soft tissues are evaluated by ultra-sonography. Besides, ultra-sonography enables needle inspiration. In addition to the characterization of the abscess, the spread to the tissues and additional pathologies can be determined with computed tomography.

Complications including thyroid storm, internal jugular vein thrombosis, airway obstruction due to the spread of inflammation, and mediastinitis with high morbidity and mortality have been reported⁹. Therefore, early diagnosis of thyroid abscess and prompt initiation of appropriate treatment are extremely important.

Thyroid abscesses are treated with surgically and systemic antibiotics. As an alternative to surgery, ultrasound-guided abscess drainage can be performed. However, in the presence of underlying pathology and in significantly complicated patients, surgical treatment is more appropriate for the treatment of abscess⁹. In such cases, absorption can be used to facilitate drainage and surgical treatment.

It is extremely important to get a diagnosis as early as possible in patients coming with complaint of cervical mass. It is encountered diagnostic difficulties due to the complex structure of this region and the diversity and excess of organs. The main causes of cervical masses are congenital, infectious-inflammatory and neoplastic diseases. Congenital lesions such as thyroglossal duct cyst, branchial cyst, lymphangioma are mostly seen in children and young adults. Besides, infectious and inflammatory cervical lymphadenitis originating from bacterial, viral, fungal and parasitic is a common cause of cervical masses. Neoplastic lesions originating from salivary glands, thyroid, vascular, neurogenic and soft tissue should be considered primarily in adults coming with complaint of cervical mass¹⁰.

Conclusion

Thyroid gland abscess is rare and has high morbidity. Thyroid abscess should be kept in mind when radiological evaluation is performed in cases presenting with swelling and redness in the neck. Early diagnosis and appropriate treatment reduce mortality and morbidity in these cases.

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