

Thyroid Abscess Presenting With Vocal Fold Immobility: A Case Report

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Abstract

An abscess in the thyroid gland is a rare finding. Thyroid infections are rare due to the good vascular supply and lymphatic drainage, high iodine content, and capsule that protects the thyroid gland. Findings of an abscess leading to vocal fold immobility are even rarer. To date, there have only been 7 reported cases in the literature.

The patient is a 67-year-old female with a history of a thyroid goiter who presented to the ED with a 3-month history of an enlarging anterior neck mass with associated dysphagia, hoarseness, and 20 lb unintentional weight loss. She was found to have a large left complex cystic thyroid mass with substernal extension and significant tracheal deviation. Flexible fiberoptic exam revealed an immobile left vocal fold. An FNA biopsy was performed revealing an abscess with cultures growing *E. coli*. The patient underwent an I&D with total thyroidectomy. Final pathology confirmed a thyroid abscess with an underlying benign goiter. The patient's dysphagia and hoarseness improved significantly post-operatively. Postoperative flexible fiberoptic exam revealed return of function of her left vocal fold. The cause of the thyroid abscess was likely due to hematogenous spread from an underlying UTI.

Introduction

Acute suppurative thyroiditis (AST), also known as a thyroid abscess is rarely seen in the thyroid gland due to protective factors such as good vascular supply and lymphatic drainage, high iodine content, and protective capsule.¹ Patients usually present with acute onset of anterior neck pain, neck swelling, and fever. Less commonly, vocal fold immobility has been reported. To date, there have been only 7 other cases reported in the literature.³⁻⁹

Case Presentation

The patient is a 67-year-old Caucasian woman who presented to the ED with a 3-month history of an enlarging anterior neck mass and progressively worsening dysphagia, hoarseness, and 20 lb unintentional weight loss. She denied any dyspnea, fevers/chills, otalgia, tobacco use, history of cancer, or any prior radiation to the head and neck. She also reported darker colored urine but denied any dysuria, hematuria, or flank pain. Past medical history included goiter, NASH liver cirrhosis, hypertension, osteoarthritis, and paroxysmal A-fib.

She was afebrile and vital signs were within normal limits. Labs revealed WBC 11.2 K/uL (neutrophils 86.5%) and normal TSH 0.43 uIU/mL. A urine analysis showed moderate leukocyte esterase and urine cultures grew *E. coli* (>100,000 cfu/mL). Two blood cultures were negative. On exam, she had mildly breathy hoarseness but no stridor or increased work of breathing. On palpation there was a large mildly tender and indurated anterior neck mass with extension past midline and extending substernal. There were no overlying skin changes.

Case Presentation Continued

On flexible fiberoptic nasopharyngolaryngoscopy, there was normal right vocal fold movement, but the left vocal fold was immobile and fixed. There were no other suspicious lesions or masses on flexible laryngoscopy. CT neck with contrast demonstrated an 8.7 x 6.9 x 8.4 cm heterogeneously enhancing complex cystic thyroid mass that extended substernally with significant rightward tracheal deviation (Fig. 1-2).

FNA biopsy was most consistent with an abscess with cultures growing *E. coli*. The patient underwent I&D of the large intrathyroidal abscess with total thyroidectomy (Fig 3-4). Final path was consistent with an abscess with necrotic tissue and nodular goiter, but without evidence of an underlying malignancy. She was treated with ceftriaxone initially and then transitioned to Bactrim at time of discharge. The patient reported significant improvements in her swallowing and voice function during hospitalization. A repeat flexible fiberoptic scope exam POD5 showed return of normal vocal fold mobility bilaterally.



Figure 1. Axial CT of thyroid abscess with gas loculations and septations.

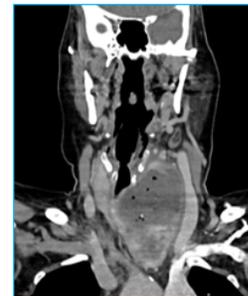


Figure 2. Coronal CT of large thyroid abscess.

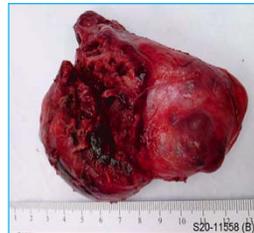


Figure 3. Thyroid abscess and nodular goiter.



Figure 4. Inflamed thyroid abscess cavity.

Discussion

Acute suppurative thyroiditis (AST) is a rare cause of pathology within the thyroid gland. Representing only 0.1-0.7% of all thyroid conditions, it is most commonly caused by gram positive bacteria (staphylococcus or streptococcus species). An underlying condition or risk factor can almost always be found. Those conditions include immunosuppressed states, thyroid or esophageal malignancies, prior direct trauma (eg. FNA biopsy or esophageal foreign body perforation), altered thyroid anatomy (goiters or cysts), or pyriform sinus fistulas (3rd and 4th branchial arch anomalies).²

The most common presenting symptoms include acute anterior neck pain, swelling, and fever. Other associated symptoms include dysphagia, odynophagia, dyspnea, and dysphonia. Rarely can vocal fold immobility be seen. Thyroid abscesses arising from pyriform sinus fistulas commonly present in the pediatric population with recurrent left-sided neck or thyroid abscesses but can also be seen late in adults.¹⁰ Treatment for thyroid abscesses includes IV antibiotics, drainage, and/or thyroidectomy. After treatment, patients with vocal fold immobility generally have complete recovery.

Conclusion

We present a rare case of a thyroid abscess causing vocal fold immobility, with complete recovery after I&D with total thyroidectomy. The abscess was presumed to be caused via hematogenous spread from a UTI in a woman with an underlying intrathoracic goiter. Thyroid abscesses are a rare potentially life-threatening cause of thyroid disease. Prompt diagnosis and treatment is important. If encountered, one should always suspect an underlying predisposing factor.

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