

CASE STUDY

Acute Suppurative Thyroiditis with Thyrotoxicosis Caused by Methicillin Resistant *Staphylococcus Aureus*

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ABSTRACT

Acute suppurative thyroiditis (AST) and thyroid abscess are rare. While in younger individuals infection usually spreads locally through the pyiform sinus, older adults are more susceptible to hematogenous seeding of the thyroid gland. Here, we describe a case of AST with thyrotoxicosis, where the clinical course deteriorated rapidly due to abscess formation. Despite early diagnosis and appropriate antibiotic therapy, abscess drainage was eventually required. Thyroid function tests are typically normal, while frank thyrotoxicosis is unusual and should not divert clinical suspicion from AST. Timely diagnosis and treatment of AST are crucial in order to avoid serious and potentially devastating complications. We emphasize significance of a high index of suspicion, appropriate treatment approach and high yield of serial imaging studies in timely diagnosis and decision making to treat AST.

Keywords: *suppurative thyroiditis, thyroid abscess, thyroid imaging, end stage renal disease, hemodialysis, catheter related infection.*

INTRODUCTION

Acute suppurative thyroiditis (AST) and thyroid abscess are relatively rare. This may be partially due to an inherent resistance of the thyroid gland to infection because of its rich blood supply, high iodine

content, encapsulation and extensive lymphatic drainage.¹⁻³ Bacterial infection with *Staphylococcus* and *Streptococcus* species are the most common causes of AST. Occasionally, the thyroid gland can be infected with fungi, parasites, or mycobacterium.¹⁻³ Less common causes of suppurative thyroiditis include *Acinetobacter*, *Salmonella*, *Klebsiella*, *Pseudomonas*, *Brucella* species, *Pasturella* species, as well as *E. coli*.³ Here we describe a case of thyrotoxicosis associated with rapidly progressive thyroid abscess caused by hematogenously disseminated *Staphylococcus aureus* in a patient with end stage renal disease (ESRD).

CASE PRESENTATION

A 43-year-old African American woman with end stage renal disease presented to the emergency department with a 4 day history of fever, chills and sore throat. Recent medical history included uneventful placement of a hemodialysis catheter 3 weeks ago. The sore throat did not respond to supportive care and rapidly progressed to include dysphagia, odynophagia and left sided neck pain. Patient had no history of head and neck irradiation or neck trauma. She was found to have a minimally enlarged thyroid gland on an unrelated CT scan several months prior to presentation. She had a 20 pack-year history of cigarette smoking and intravenous cocaine abuse. On examination, her oral temperature was 39°C, supine blood pressure was 160/100 mmHg, and pulse rate was 110 beats per minute. She had a symmetrically enlarged thyroid gland with significant tenderness over the left lobe. No overlying skin erythema, warmth or fluctuation were appreciated at this time. The rest of the physical exam was significant for fine tremor of both upper extremities and brisk deep tendon reflexes. Thyroid function tests confirmed thyrotoxicosis and the rest of her laboratory studies during current and previous admissions are shown in Table 1. Patient was started on intravenous (IV) vancomycin and ampicillin-sulbactam, due to suspicion of thyroid abscess.

Thyroid ultrasound was performed the next morning. It showed diffusely enlarged gland with mixed hyper- and hypo-echoic areas without definite nodules or an increase in blood flow. CT scan of the neck showed extensive inflammatory

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