A young fit man presenting to the emergency department with a painful neck due to a thyroid abscess

C. IZZI-ENGBEAYA$^{1,2}$, S. ZAC-VARGHESE$^{1,2}$, F. PALAZZO$^3$, F. SANDERSON$^4$, K. MEERAN$^{1,2}$ and W.S. DHILLO$^{1,2}$

From the $^1$Section of Investigative Medicine, Imperial College London, Hammersmith Hospital, London, W12 ONN, UK, $^2$Department of Endocrinology and Diabetes, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, W6 8RF, UK, $^3$Department of Endocrine Surgery, Imperial College Healthcare NHS Trust, Hammersmith Hospital, London, W12 0HS, UK and $^4$Department of Infectious Diseases, Imperial College Healthcare NHS Trust, Charing Cross Hospital, London, W6 8RF, UK

Address correspondence to Prof. W. S. Dhillo, Section of Investigative Medicine, Imperial College London, 6th Floor, Commonwealth Building, Hammersmith Hospital, Du Cane Road, London W12 ONN, UK. email: w.dhillo@imperial.ac.uk

Learning Point for Clinicians

This case exemplifies the need to consider less common diagnoses if a patient’s presentation is non-classical, such as in our patient who had an erythematous neck, unilateral thyroid lobe enlargement and grossly elevated white cell count and C-reactive protein (CRP) that would not be expected to occur with viral thyroiditis.

A 38-year-old Caucasian man presented to our emergency department with a week's history of sore throat, dysphagia, neck swelling and fever. One month prior, he experienced a respiratory tract infection, for which he had not sought medical advice and which had resolved without antibiotics. He had no history of trauma or procedures involving the neck. He had no notable past medical or family history. He was a non-smoker and drank 15 U of alcohol per week. On examination, he was a young fit man, slightly sweaty and flushed but otherwise looked well [he was afebrile, chest was clear, heart sounds were normal, he had a sinus tachycardia (110 bpm) and his blood pressure was 148/88 mmHg]. His anterior neck was erythematous, the right thyroid lobe was smoothly enlarged and no bruits were heard over his thyroid. There was no palpable cervical lymphadenopathy and no evidence of tonsillitis. An initial clinical diagnosis of de Quervain’s thyroiditis was made. Blood tests revealed elevated white cells $20 \times 10^9/l$ (NR 4.2–11.2), elevated CRP 515 mg/l (0–5) and normal thyroid function. Due to the neck erythema and high CRP, a neck ultrasound scan was requested.

The ultrasound revealed a large, complex, purulent collection extending from the right thyroid lobe abutting the strap muscles (Figure 1a). On computed tomography (CT) scanning (Figure 1b), it measured $2.4 \times 1.8 \times 11.5$ cm. Samples were obtained from the collection but complete percutaneous drainage was not possible due to the viscosity of the fluid. HIV testing was negative, fasting blood glucose and HbA1c excluded diabetes, and there was no serological evidence of immunoglobulin deficiency. Group A beta haemolytic streptococcus was cultured from the pus but blood cultures were sterile. Guided by sensitivities, empirical intravenous co-amoxiclav was changed to intravenous ceftriaxone and oral clindamycin. He was discharged after 5 days and continued treatment as an outpatient under the...
supervision of the Infectious Diseases team. Following 10 days of intravenous ceftriaxone, 20 days of oral clindamycin and 2 weeks of oral co-amoxiclav with additional amoxicillin, there was complete radiological resolution of the abscess. This duration of antibiotics was required to ensure the abscess was adequately treated.

Video fluoroscopy and direct pharyngo-laryngoscopy excluded a piriform sinus fistula. All previously abnormal blood tests normalized and no mycobacteria were cultured from extended culture of the abscess fluid. Several months after cessation of antibiotic treatment, the patient remains well with no recurrence of the thyroid abscess.

Viral thyroiditis remains the most likely diagnosis in a patient with a painful thyroid (especially with a history of a preceding respiratory tract infection). However, thyroid abscess must also be considered because although it is rare, it is associated with a mortality of 8.6–25%. In contrast, viral thyroiditis is not associated with increased mortality. Furthermore, thyroid abscess requires treatment with antibiotics (and surgical intervention in some cases), whereas viral thyroiditis is managed with analgesia and steroids or without medication and/or surgical intervention. Thyroid abscess has been reported in people with diabetes (with Klebsiella infection occurring at a higher frequency than in people without diabetes), tuberculosis and immunocompromised patients (where fungi are found to be the causative organisms). Therefore, efforts should be made to diagnose these conditions if present. The presence of a piriform sinus fistula predisposes patients to recurrent thyroid abscesses, thus, Otorhinolaryngologists should be involved to ensure this anatomical variant is identified and corrected.

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