Painful neck swelling in a patient with end-stage renal disease on haemodialysis

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DESCRIPTION

Acute suppurative thyroiditis (AST) is rarely seen as thyroid gland is highly resistant to infection due its thick capsule and high iodine content.¹ Here, we report a case of successfully managed bacterial thyroid abscess in a patient of end-stage renal disease with catheter-related blood stream infection (CRBSI).

A 24-year-old woman presented to our hospital with fever and painful neck swelling for 25 days. Two months before present admission, she was diagnosed to have end-stage renal disease (chronic glomerulonephritis) and was initiated on haemodialysis via untunneled right internal jugular catheter. On examination, she had a temperature of 40°C, pulse rate of 120/min, blood pressure of 146/90 mm Hg and there was a 5×6 cm tender swelling in the anterior aspect of neck moving with deglutition. Laboratory parameters revealed severe anaemia (haemoglobin 52 g/L), leucocytosis (28×10⁹/L with neutrophilic predominance), hypoalbuminaemia (2.3 g/dL) and procalcitonin of 15.7 ng/mL. Paired blood cultures from the catheter hub and peripheral blood on day 1 of admission grew *Stenotrophomonas maltophilia* and methicillin-resistant *Staphylococcus aureus* sensitive to vancomycin. Thyroid function tests showed elevated T3 (3.78 ng/mL), T4 (24 µg/dL) and thyroid stimulating hormone (7.87 µIU/ml). Sonography of the neck showed multiple echogenic lesions seen in both lobes of the thyroid gland likely thyroiditis with evolving abscess. Trans-oesophageal echocardiogram did not reveal any vegetation. Contrast-enhanced

computed tomography of the neck, chest and abdomen was done to look for extension of abscess or any focus of haematogenous spread, revealed only the thyroid abscess with no extrathyroid extension (figure 1). Ultrasound-guided aspiration from the swelling revealed a cloudy fluid with neutrophil-rich infiltrates, and mycobacterial, bacterial and fungal cultures were sterile. Thyroid abscess aspiration was done 3 days after the start of antibiotics, which could explain sterile bacterial culture. A diagnosis of bacterial multidrug-resistant thyroid abscess due to CRBSI and haematogenous spread was considered. Catheter was removed and parenteral antibiotics (vancomycin and levofloxacin) were administered for 4 weeks. The patient became afebrile with resolution of the neck swelling after a week. Arteriovenous fistula was created and a tunneled right internal jugular catheter was inserted.

Thyroid abscess is very rare and no case of thyroid abscess secondary to CRBSI has been reported so far. The increased susceptibility to infection may be multifactorial in our patient—chronic kidney disease being an immunosuppressed state, CRBSI as well as repetitive exposure to pathogens during haemodialysis.² A clinician should always suspect thyroid abscess in a patient with acute onset painful neck swelling.

Learning points

- ▶ Always consider acute suppurative thyroiditis as a cause of painful neck swelling in immunocompromised patients.
- ▶ Ultrasound is the preferred imaging modality to diagnose this entity.
- ▶ Prompt antimicrobial and drainage of thyroid abscess should be done to improve the survival.

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Figure 1 Intravenous contrast-enhanced CT scan of the neck (axial view) showing a large swelling in anterior aspect of neck with hypodense areas suggestive of thyroid abscess.

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