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Fungal thyroiditis in a lung transplant recipient

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Accepted 22 September 2018

DESCRIPTION

A 59-year-old man was admitted with 3 weeks of worsening shortness of breath 18 months after receiving

Figure 1 Chest CT showing multiple pulmonary nodules in the right lower lung field (red arrows).

Figure 2 Fungal hyphae are present on Gomori Methenamine-Silver (GMS) stain from CT-guided lung biopsy (x200).

Figure 3 CT of the neck revealed a mass-like lesion in the right lobe of the thyroid (green arrow).

a bilateral lung transplant for idiopathic pulmonary fibrosis. His immunosuppression included tacrolimus, everolimus and low-dose prednisone with no antifungal prophylaxis at the time of admission. CT chest revealed multiple, bilateral pulmonary nodules (figure 1—red arrows). CT-guided biopsy revealed fungal hyphae (figure 2). The initial CT and ultrasound of the neck at the onset of sore throat was negative; however, repeat CT neck for evolving neck pain and dysphasia during hospital course showed a mass-like lesion in the right thyroid lobe with extensive surrounding inflammatory changes (figure 3—green arrow). The lesion was also visualised on ultrasound, where it appeared as a hypoechoic solitary nodule (figure 4). Laboratory evaluation revealed hyperthyroidism, with a Thyroid Stimulating Hormone (TSH) of $<0.01 \mu\text{IU/mL}$ (normal: $0.35\text{--}4.94 \mu\text{IU/mL}$) and a free T4 of 2.72 ng/dL (normal: $0.70\text{--}1.48 \text{ ng/dL}$). The patient was initiated on dual antifungal therapy with liposomal amphotericin and posaconazole, resulting in rapid resolution of neck pain. However, repeat CT neck 2 weeks after revealed a thyroid abscess in the

Figure 4 Thyroid ultrasound reveals a $2.8 \times 2.3 \text{ cm}$ hypoechoic lesion in the right thyroid isthmus.

Figure 5 Fungal hyphae were present in the necrotic material from the thyroid abscess debridement (H&E, x400).

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To cite: King C, Clement S, Katugaha S, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2018-227033

Images in...

right lobe, and subsequently the patient underwent right thyroid lobectomy and isthmusectomy. Surgical debridement of the thyroid abscess revealed fungal hyphae; thus, confirming the diagnosis of fungal thyroiditis (figure 5). A specific fungal pathogen was never successfully cultured from our patient. He was treated for presumed

Aspergillus infection, the most common etiology of fungal thyroiditis, with clinical improvement.¹

Learning points

- ▶ Thyroiditis is a rare manifestation of disseminated fungal infection in immunocompromised hosts.
- ▶ *Aspergillus* spp are the most commonly implicated pathogen, although there are reports of cases due to *Cryptococcus neoformans*, *Histoplasma capsulatum*, *Coccidioides immitis* and *Candida* spp.
- ▶ Antifungal therapy targeting the culprit organism and consideration of surgical debridement are the mainstays of treatment.

Acknowledgements Hareesh Mani, MD Min Kim, MD.

Contributors CK, SK and AWB: planning, writing, revision. SC: planning, revision.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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