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Fungal thyroiditis in a lung transplant recipient

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DESCRIPTION

A 59-year-old man was admitted with 3 weeks of worsening shortness of breath 18 months after receiving 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 µIU/mL (normal: 0.35–4.94 µIU/mL) and a free T4 of 2.72 ng/dL (normal: 0.70–1.48 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

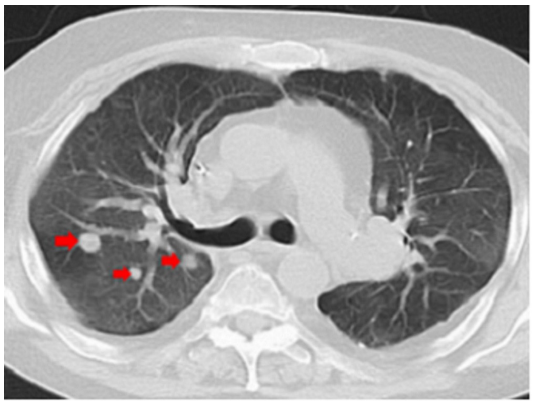

Figure 1 Chest CT showing multiple pulmonary nodules in the right lower lung field (red arrows).

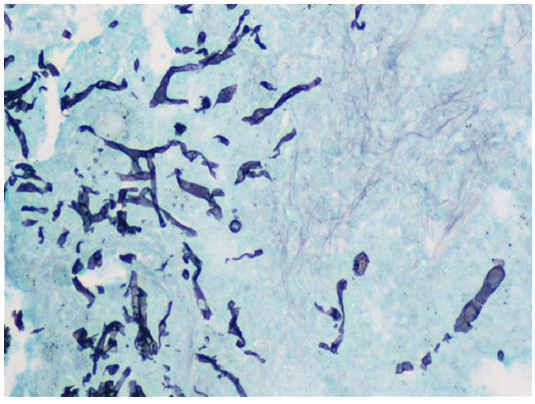

Figure 2 Fungal hyphae are present on Gomori Methenamine-Silver (GMS) stain from CT-guided lung biopsy (x200).

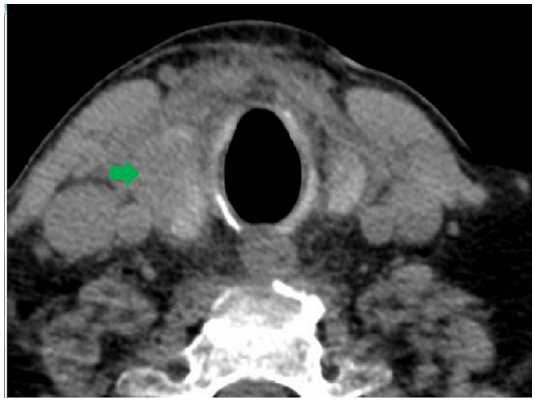

Figure 3 CT of the neck revealed a mass-like lesion in the right lobe of the thyroid (green arrow).

Figure 4 Thyroid ultrasound reveals a 2.8×2.3 cm hypoechoic lesion in the right thyroid isthmus.

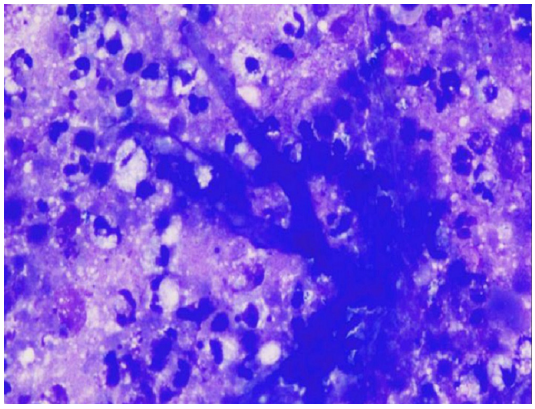

Figure 5 Fungal hyphae were present in the necrotic material from the thyroid abscess debridement (H&E, x400).

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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.

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