Acute Invasive Fungal Thyroiditis – A Catastrophic Event Post-Renal Transplant

Dear Editor,

Fungal thyroid infections are rare but more common in immunocompromised individuals. Mucormycosis, caused by Mucorales species, is aggressive and primarily affects those with conditions like diabetes, hematological malignancies, or organ transplants.[1,2]

Mucorales spp. fungal thyroiditis is exceptionally rare with just 11 reported cases. Only two cases involved isolated thyroid disease: one in an Indian renal transplant patient and another in a Polish child with acute lymphoblastic leukemia.[1,3]

A 60-year-old renal transplant patient on triple drug immunosuppression presented with progressive neck swelling. Despite an uneventful posttransplant period with stable graft function, he developed chronic graft rejection and rising serum creatinine levels. Subsequent neck swelling revealed thyroid involvement by mucormycosis. Emergent tracheostomy was performed due to bilateral recurrent laryngeal nerve involvement and acute respiratory distress. Total thyroidectomy showed extensive necrotic tissue [Figure 1a] and histopathology confirmed angioinvasive mucormycosis [Figure 1b and 1c]. Fungal stains revealed positive findings [Figure 1d]. Despite the initiation of systemic antifungal therapy, the patient succumbed to the disease within 2 days.

Invasive fungal infections, particularly in renal transplant recipients, pose diagnostic and therapeutic challenges. While Candida infections are common, invasive aspergillosis is highly fatal. Aspergillus is among the most frequent fungal infections of the thyroid, while mucormycosis is comparatively less prevalent.[1,2] Mucormycosis involving the thyroid gland is rare and often diagnosed incidentally during postmortem examination.[4] The thyroid's resistance to infection is attributed to various factors, including its vascular supply, capsule and high iodine content. Diagnosing mucormycosis is difficult, often mimicking other thyroid conditions. Prompt treatment, including early recognition and surgical resection is crucial for better survival.[4,5] Despite efforts, mucormycosis mortality rates remain high, especially in cases of dissemination as seen in this patient.

This case underscores the need for swift diagnosis and aggressive treatment in isolated thyroid gland mucormycosis, a rare complication in transplant recipients under immunosuppressive therapy.

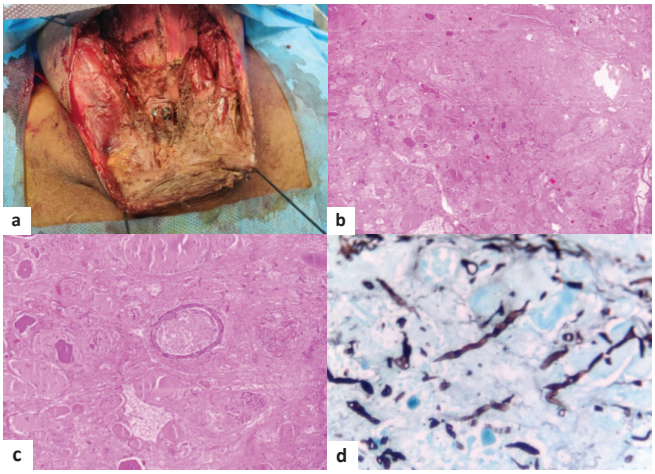

Figure 1: (a) Intra-operative image showing necrotic avascular field. (b) Photomicrograph showing abundant broad aseptate branched fungal hyphae and spores with necrotic slough (HE 100×). (c) Photomicrograph showing extensive angio-invasion (HE 200×). (d) Photomicrograph showing Grocott Methamine Silver (GMS) positive fungal hyphae (HE 200×).

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Conflicts of interest

There are no conflicts of interest.

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Hidden in Plain Sight—A Rare Presentation of Cystic Fibrosis with Pseudo-Bartter Syndrome

Dear Editor,

A three-month-old girl presented with persistent vomiting, failure to thrive and hearing loss. She was static at the birth weight of 3 kg. Investigations revealed hyponatremia (122 meq/L), hypokalemia (2.6 meq/L), hypochloremia (88 meq/L), hypocalcemia (6.8 mg%), and metabolic alkalosis (PH 7.6). Urine electrolytes showed low urine sodium and chloride (10.4 mmol/L and 47 mmol/L, respectively). Brainstem evoked response audiometry (BERA) confirmed bilateral severe hearing loss. Based on the above laboratory findings with sensorineural hearing loss, a diagnosis of Type 4A antenatal Bartter syndrome was made. Indomethacin was planned. A clinical exome test uncovered a homozygous mutation in the CFTR gene on exon 19, with the pathogenic variant of c3107C > T, consistent with the diagnosis of CF. The missense mutation has caused substitution of isoleucine for threonine at codon 1036. This was previously noted in a study done on Iranian patients and was described as a novel mutation.[1] She is being treated with supplements of salt and calcium, and cochlear implant is planned.

The incidence of pseudo bartter syndrome (PBS) in CF ranges from 12% - 16%.[2] Persistent vomiting is a distinctive warning sign for early identification. The mechanism is activation of renin angiotensin aldosterone system due to excessive loss of sodium chloride in sweat. This is in contrast to Bartter syndrome, where there is defective sodium reabsorption from the thick ascending limb of Henle.[3] PBS results in low levels of urine sodium and chloride, whereas bartter syndrome has increased levels.[3] The management involves dehydration correction.

PBS usually presents in the neonatal age group.[4] Often, it presents before the typical manifestations of CF set in. In areas with low newborn screening, this metabolic feature coupled with failure to thrive can give a mammoth clue to physicians towards cystic fibrosis. This case report highlights the diagnostic dilemma that cystic fibrosis can be if its hallmark features have not yet presented.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Conflicts of interest

There are no conflicts of interest.

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