

Laryngeal Tuberculosis in the Modern Era

Diagnostic Challenges

To the Editors:

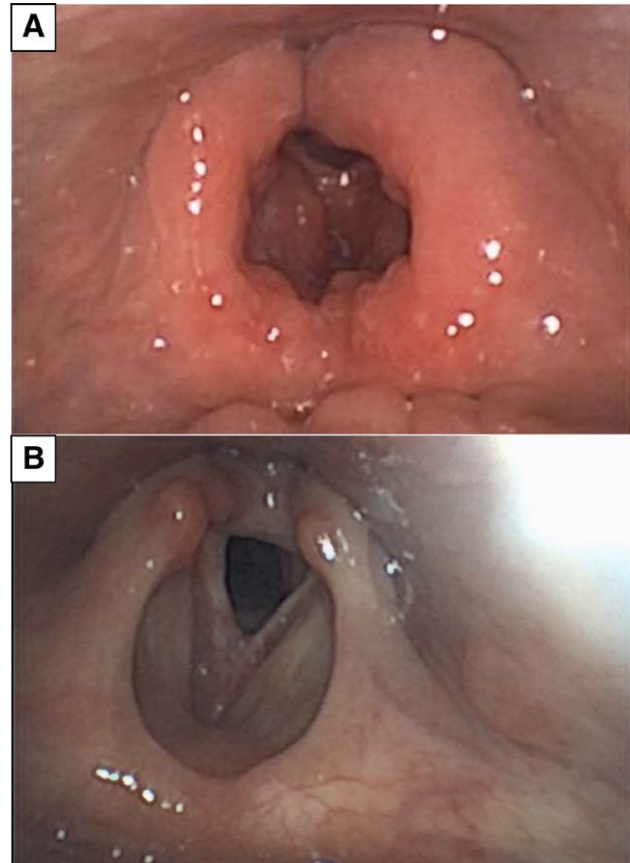
Tuberculosis (TB), caused by *Mycobacterium tuberculosis*, has declined globally, yet Angola remains among the 30 highest-burden countries, with an incidence of 300–499 cases per 100,000 annually.¹ Children 0–14 years of age account for ~11% of cases.¹ Laryngeal TB is a rare extrapulmonary form (~1%).^{2,3} Diagnosis requires a high index of suspicion to avoid delays. Increasing global migration has contributed to rising TB cases in historically low-endemic settings, underscoring its ongoing clinical relevance.

A 15-year-old girl from Luanda, previously healthy and vaccinated (including Bacillus-Calmette-Guérin vaccine, without Human Papillomavirus vaccine), presented with months of dysphonia. Evaluation in Angola identified laryngeal nodules, treated with excision, biopsy and interferon. Symptoms worsened, with snoring and sleep apnea, prompting repeat excision and referral to Portugal. She also reported unquantified weight loss, without systemic symptoms (fever, cough, anorexia and night sweats).

Three years after onset, laryngoscopy in Portugal revealed extensive papillary lesions causing ~70% glottic–subglottic narrowing. Biopsy showed necrotizing granulomas with multinucleated giant cells (Langhans type). Acid-fast staining and immunohistochemistry for herpes simplex virus-1 and fungi were negative. The workup for granulomatous disease is summarized in Table, Supplemental Digital Content 1, <https://links.lww.com/INF/G609>.

During the diagnostic workup, a positive interferon gamma release assay (T-SPOT) prompted referral and hospitalization. Retrieval of the biopsy report from Angola revealed caseating granulomas with

FIGURE 1. A: Initial laryngoscopy performed during an otorhinolaryngology consultation in Portugal. B: Follow-up laryngoscopy performed after antibacillary therapy.



focal necrosis, consistent with laryngeal tuberculosis. Three gastric aspirates were negative for acid-fast bacilli, and nucleic acid amplification tests were also negative; cultures were pending.

Given epidemiologic risk, interferon gamma release assay positivity and histologic findings, probable laryngeal tuberculosis was diagnosed and treatment initiated. Two months later, gastric aspirate cultures confirmed *Mycobacterium tuberculosis* sensitive to Isoniazid (H), Pyrazinamide (Z), Ethambutol (E), Rifampicin (R) and Streptomycin. The patient received 2 months of HRZE followed by 4 months of HR. After 1 month, sleep apnea resolved, dysphonia improved and weight increased. Follow-up laryngoscopy showed regression of lesions with residual vocal cord thickening (Fig. 1).

Laryngeal tuberculosis may occur as a primary or secondary form. Primary disease, more common in children, arises via hematogenous or lymphatic spread without pulmonary involvement, whereas secondary disease results from direct inoculation by infected sputum. In this case, the absence of pulmonary findings supports primary laryngeal TB.³

Advances in TB control have made laryngeal infection rarer and harder to recognize.³ Laryngoscopic features are heterogeneous, including granulomatous, ulcerative and polypoid lesions, often mimicking other conditions. Histopathological confirmation is essential; notably, in this case, the initial biopsy already demonstrated necrotizing granulomas suggestive of TB, representing a missed diagnostic opportunity.^{2,3}

Clinical presentation has shifted from systemic symptoms to localized airway complaints (dysphonia, odynophagia and dysphagia).² In children, airway compromise and stridor are particularly frequent.⁴ Our patient presented with isolated dysphonia that progressed to airway compromise over 3 years.

Standard 6-month anti-tuberculosis therapy (HRZE followed by HR) remains the most used regimen, as in this case, with good clinical response.⁵ The role of corticosteroids is uncertain and not routinely recommended, though they may be considered in cases of significant airway compromise.

This case highlights the diagnostic challenges of laryngeal TB and the importance of early recognition, particularly in patients from endemic regions.

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