

## Imaging Case Study of the Month

# Penetrating Foreign Body Mimicking Supraglottic Carcinoma

Andrea Bolzoni, MD; Giorgio Peretti, MD; Cesare Piazza, MD;  
Barbara Pedruzzi, MD; Piero Nicolai, MD

Penetrating trauma to the neck is a rare observation. We report the first case of laryngeal myofibroblastic tumor due to a persistent splinter of glass in the preepiglottic space, which presented with recurrent mild hemoptysis and cough, and mimicked supraglottic carcinoma. The clinical and imaging evaluations are herein reported. Finally, medical and surgical options in the management of this unusual observation are discussed.

**Key Words:** foreign body, laryngeal trauma, myofibroblastic tumor.

### INTRODUCTION

Laryngeal trauma is an uncommon event, with an incidence ranging from 1 in 5,000 to 1 in 137,000 per year in emergency units.<sup>1,2</sup> Penetrating injuries of the neck usually occur in suicides and accidental cuts.<sup>3</sup> Prompt imaging by means of computed tomographic (CT) scanning and surgical exploration are usually required.

To the best of our knowledge, we report the first case of a persistent cervical foreign body presenting as a supraglottic neoplasm many years after the initial traumatic event.

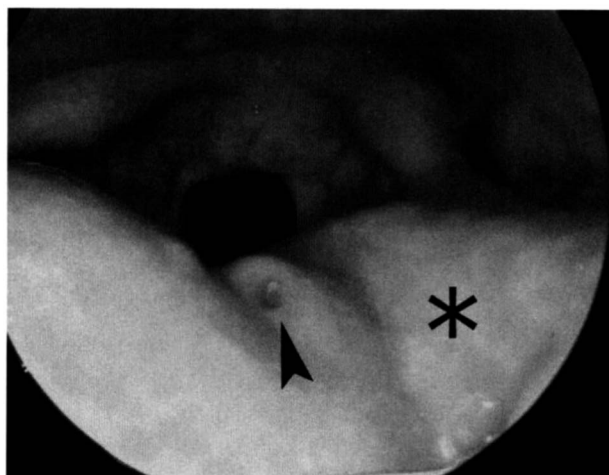
### CASE REPORT

A 73-year-old man was referred to the Department of Otorhinolaryngology of the University of Brescia, Italy, for recurrent mild hemoptysis associated with dysphonia and cough. The patient's clinical history included an acute myocardial infarction that had occurred 10 years earlier and still required pharmacologic therapy. The patient also had chronic bronchitis, and had had a penetrating trauma on the left side of the upper neck from broken glass at 24 years of age.

Upon videolaryngoscopic examination with a 70° rigid endoscope, we observed a submucosal mass with ill-defined margins involving the left side of the infrahyoid epiglottis and extending to the left vallecula and aryepiglottic fold. Moreover, a small ulceration — a possible cause of the hemoptysis — was visible (Fig 1). The glottis was not involved by the lesion, and both vocal folds displayed normal mobility. No enlarged lymph nodes were palpable on either side

of the neck. A neoplasm of the supraglottic larynx was the most likely diagnosis, and we performed a biopsy under local anesthesia and a CT scan with contrast agent administration.

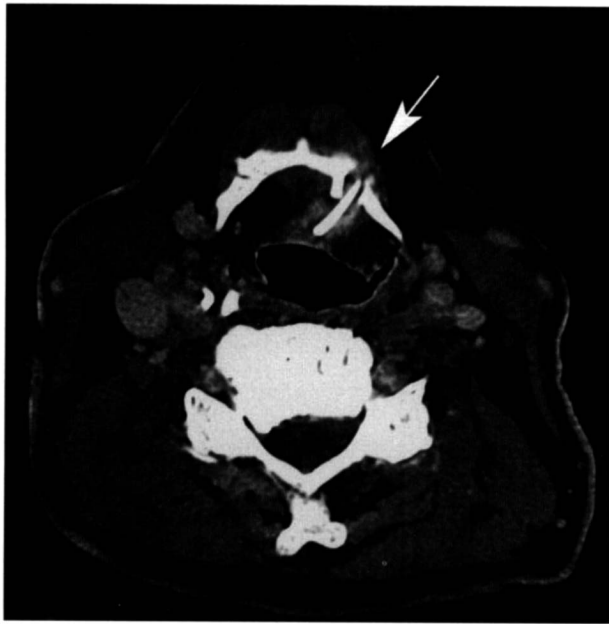
The CT scan revealed the presence of a foreign body (1.5 cm long, 0.2 cm thick), with a density comparable to bone, located in the upper portion of the left preepiglottic space in strict contact with the hyoid bone and reaching the mucosal surface of the epiglottis. Because of the density and shape (Fig 2), we suspected a splinter of glass surrounded by an inflammatory reaction, residual to the previously reported trauma. The pathology report on the biopsy said the findings were suggestive of chronic inflammation. Be-



**Fig 1.** Videolaryngoscopic appearance by 70° rigid telescope. Asterisk — submucosal lesion involving infrahyoid epiglottis; arrowhead — mucosal ulceration.

From the Department of Otorhinolaryngology–Head and Neck Surgery, University of Brescia, Spedali Civili, Brescia, Italy.

**Correspondence:** Andrea Bolzoni, MD, Dept of Otorhinolaryngology, University of Brescia, Piazza Spedali Civili 1, 25123 Brescia, Italy.



**Fig 2.** Computed tomographic scan with contrast agent administration in axial plane at level of hyoid bone. Arrow — foreign body in preepiglottic space surrounded by fat tissue with altered density due to inflammatory reaction.

cause of the association of notable comorbidities and the spontaneous resolution of symptoms after steroid and broad-spectrum antibiotic therapy, we adopted a “wait-and-see” policy with periodic videolaryngoscopic examinations. The patient is still asymptomatic 18 months after the first evaluation.

#### DISCUSSION

To the best of our knowledge, this is the first reported case in the English-language literature of a persistent, penetrating laryngeal foreign body presenting as a supraglottic carcinoma.

Patients with penetrating injuries of the neck always need immediate surgical exploration with removal of foreign fragments, repair of possible cartilaginous fractures, and suture of mucosal and/or cutaneous wounds.<sup>3</sup> The persistence of an overlooked foreign body in the soft tissues could contribute to acute infections or cause a chronic inflammatory process with granulomatous tissue formation and variable fibrotic reaction, otherwise known as a pseudotu-

mor or myofibroblastic tumor. Such an entity includes a heterogeneous group of lesions widely recognized as mostly displaying a favorable prognosis. Their pathogenesis remains largely unknown, even though reports of postsurgical, postinfectious, and posttraumatic cases have raised the hypothesis that an initial inflammatory process may possibly lead to a neoplastic lesion.<sup>4</sup> Myofibroblastic tumor of the larynx is usually reported as a polypoid lesion involving the glottis.<sup>5</sup> Anstey et al<sup>6</sup> also reported a case of hypopharyngeal-laryngeal pseudotumor presenting as an extended submucosal mass with massive involvement of the paraglottic space and unilateral vocal fold paralysis that required tracheotomy for acute dyspnea. The biopsy was negative for malignancy and identified fragments of foreign material. The patient was treated with conservative therapy (broad-spectrum antibiotics and prednisolone) with complete resolution of signs and symptoms.

An accurate analysis of clinical history combined with CT examination was crucial in the therapeutic planning of our case. A “wait-and-see” policy was adopted because of the resolution of symptoms with medical therapy, in addition to the consistent comorbidities and the age of the patient. As a matter of fact, general anesthesia would have been indicated to remove the glass fragment, which was deeply located in the upper part of the neck, close to the left lingual artery. A left cervicotomy through the preexistent scar would have allowed good exposure with relatively safe control of possible bleeding. By contrast, endoscopic removal of the foreign body should have been avoided because of the high risk of lingual artery damage, with potential subsequent massive hemorrhage that would not be manageable by endoscopy.

In summary, a persistent penetrating cervical foreign body presenting as a laryngeal tumor can be considered an extremely rare clinical observation. Nevertheless, when the clinical history of the patient includes a previous penetrating neck injury, even one that occurred many years before, this possibility should be considered and excluded by biopsy and adequate imaging study.

#### REFERENCES

- Schaefer SD. The treatment of acute external laryngeal injuries. “State of the art.” *Arch Otolaryngol Head Neck Surg* 1991;117:35-9.
- Jewett BS, Shockley WW, Rutledge R. External laryngeal trauma: analysis of 392 patients. *Arch Otolaryngol Head Neck Surg* 1999;125:877-80.
- Cherian TA, Rupa V, Raman R. External laryngeal trauma: analysis of thirty cases. *J Laryngol Otol* 1993;107:920-3.
- Chan JK. Inflammatory pseudotumor: a family of lesions of diverse nature and etiologies. *Adv Anat Pathol* 1996;3:156-69.
- Wenig BM, Devaney K, Bisceglia M. Inflammatory myofibroblastic tumor of the larynx. A clinicopathologic study of eight cases simulating a malignant spindle cell neoplasm. *Cancer* 1995;76:2217-29.
- Anstey ST, Marais J, Wallace W. An unusual case of laryngeal pseudotumour. *J Laryngol Otol* 1995;109:142-3.