A 5-year-old girl presented to the emergency department with a history of shortness of breath and coughing. Although she had been coughing for several weeks, there was an abrupt change in character and the cough became more "croupy" on the night of her presentation to the hospital. The patient complained of a "scratchy" sensation in her throat. No fever was reported.

On physical examination, the patient's vital signs were as follows: temperature, 37.2°C; pulse, 150 beats per minute; respiratory rate, 26 per minute; and blood pressure, 120/65 mm Hg. She was a well-developed child who was alert and cooperative. She was not in respiratory distress, but had a dry, croupy cough and mild inspiratory and expiratory stridor, and constantly attempted to clear her throat. The remainder of the examination findings were normal. A pulse oximeter reading showed 95% to 100% oxygen saturation in room air. Chest radiographic findings were normal.

A diagnosis of foreign body aspiration or foreign body lodged within the pharynx was entertained, although the patient denied any foreign body ingestion. A lateral neck roentgenogram was obtained (Fig 1), and reportedly demonstrated a calcified foreign body at the level of the hypopharynx. An otolaryngologist was consulted to remove the foreign body.

Figure 1.
Denouement and Discussion

A Pediatric Case of Eagle’s Syndrome

Fig 1.—Lateral neck roentgenogram showing a calcification extending from C-1 to the angle of the mandible.

Fig 2.—Diagram demonstrates the stylomandibular, stylohyoid ligament complex. A indicates stylomandibular ligament; and B, stylohyoid ligament.

On review of the radiographs, we identified the “foreign body” as a calcified stylomandibular ligament. The scratchy sensation and continual clearing of the throat were symptoms associated with this calcified ligament. The patient was reassured and no therapy was administered. Incidental sinus radiograms were obtained and showed bilateral maxillary sinus opacification. The patient was given a diagnosis of chronic sinusitis and symptomatic calcified stylomandibular ligament; she was discharged while receiving amoxicillin treatment.

Eagle’s syndrome is defined as the symptomatic mineralization of the stylohyoid-stylomandibular ligament complex (MSSL/C).1 The variations of the styloid process and its adjoining ligaments have been of interest to anatomists for 300 years, most recently in relation to the advent of diagnostic radiology.

Eagle reported more than 200 cases in the 1930s and 1940s and documented symptoms associated with anomalies of the styloid process. Although many patients are asymptomatic, the symptoms associated with MSSL/C are related to the hypopharynx. These include dysphagia (80%), pharyngeal foreign body sensation (55%), and constant aching in the throat (40%).2 Less common complaints include otalgia, headache, pain on turning the head, and facial pain.3

The styloid process is usually a small, slender, tapering projection of the temporal bone located in front of the stylohyoid foramen. It lies between the internal and external carotid arteries, posterior to the tonsillar fossa and lateral to the pharyngeal wall, with three muscles (the stylohyoideus, stylohyoid, and styloglossus) attached to it. These are supplied by the glosopharyngeal, facial, and hypoglossal nerves, respectively. At the apex, two ligaments are inserted into the styloid. The stylohyoid ligament extends from the far end of the styloid process to the lesser cornu of the hyoid bone. The stylomandibular ligament is inserted at the angle of the apex and extends to the angle of the mandible (Fig 2).2,4

A radiographic survey of 4200 men aged 18 to 22 years demonstrated only a 1.4% incidence of MSSL/C. None of the patients was symptomatic. In other studies, 8% to 28% of patients with MSSL/C have been symptomatic. Clinically, the syndrome is usually not seen prior to age 30 years.3 In a review of the literature by Gossman and Tarsitano,3 only one patient younger than 30 years was found to be symptomatic. The anomaly is present more frequently in the 40- to 80-year age range, with symptoms developing after the fourth decade.6 The etiology of the mineralization is unknown. There is no significant sex predilection in the occurrence of MSSL/C; however, symptoms are more common among women.4

The radiographic diagnosis of the MSSL/C is best made with a temporomandibular joint panoramic radiograph and frontal and lateral projections of the neck to visualize the anatomy in three planes. The anomaly is bilateral and the elongated styloid process can be palpated by inserting a finger orally along the occlusal line posterior to the region of the tonsillar fossa. Pain is experienced as the elongated process is palpated. Another test is to administer regional anesthesia in the area of the tonsillar fossa for relief of symptoms.3

The differential diagnosis of Eagle’s syndrome includes impacted third molars; migrainous neuralgias; trigeminal, vagoglossal, or geniculate neuralgias; temporomandibular joint abnormalities; and psychosomatic disease.1

Treatment in severely symptomatic patients is surgical excision of the styloid process. Most patients require only reassurance and symptomatic treatment. Calcification of the styloid process is not an uncommon occurrence and physicians should be aware of this entity when entertaining the diagnosis of an atypical pharyngeal foreign body.

References