Eagle’s syndrome as a differential diagnosis in odynophagia

Kaveshan Naidoo, Subhaschandra Shetty

History
Eagle’s syndrome was first comprehensively described in 1937, by Watt Eagle. However, stylohyoid ligament ossification was described as early as 1652 by Pietro Marchetti of Padua. In 1870, Lucke described pain associated with this anatomical variation. The first surgical excision of the styloid process to treat symptoms was in 1872 by Weinlechner of Vienna. The incidence of an elongated styloid process amongst the general population ranges between 4–18.2%. However, the incidence of true Eagle’s syndrome is highly controversial, ranging between 0.16–17%. 

Anatomy
The styloid process is a cylindrical, bony projection of the temporal bone and is derived from the second pharyngeal arch (Reichert’s cartilage). It is located between the internal and external carotid arteries and the internal jugular vein, and lies anteromedially to the stylo-mastoid foramens. Three muscles are attached to the styloid process: styloglossus, stylopharyngeus, and stylohyoid; these extend to the tongue, pharynx, and hyoid bone, respectively. The two ligaments attaching to the styloid process are the stylomandibular and stylohyoid ligaments, associated with movements of the mandible, hyoid bone, tongue and pharynx. The styloid process length ranges between 0.1 and 8 cm; a styloid process greater than 3 cm is widely accepted as being elongated.

Clinical presentation
Radiological evidence suggests that styloid process elongation is usually bilateral. However, symptoms are almost always unilateral. Eagle’s syndrome has been shown to occur more often in women than men, and a greater incidence has been noted in elderly women, which is thought to be associated with menopause. Calcification of the styloid process is attributed to the deposition of calcium salts, and has been shown to be associated with renal disease; causing abnormalities in vitamin D, calcium, and phosphorous metabolism.

Eagle’s syndrome typically presents with persistent unilateral pharyngeal pain that worsens with swallowing. The pain may also be referred to the ear, resemble a foreign body sensation, or be accompanied by painful trismus. Eagle described two forms of the syndrome: a vascular form associated with impingement of the internal carotid artery by the styloid process, and the form associated with scar tissue development around the tip of the styloid process after tonsillectomy. The vascular form may cause transient ischaemic attacks or strokes when turning the head.

Case
A 44-year-old female presented with a two-week history of painful swallowing following the ingestion of chicken. She was subsequently referred to the otorhinolaryngology/head and neck service for further investigation. No chicken bone was noted on fibre optic nasendoscopy. However, elongation of the styloid process was noted on x-ray (Fig 1.). Following administration of non-steroidal anti-inflammatory drugs (NSAIDs), her pain resolved and further management was not indicated.

Diagnosis
The diagnosis of Eagle’s syndrome is based on symptomatology; digital palpation of the styloid process in the tonsillar fossa; radiographical evidence of calcification or elongation of the styloid process on x-ray or computed tomography of the neck; or a positive local anaesthetic infiltration test, whereby symptoms are relieved following injection into the anterior tonsillar pillar. Treatment of Eagle’s syndrome may be conservative or surgical. Conservative management involves injecting steroids into the lesser cornu of the hyoid or the inferior aspect of the tonsillar fossa. NSAIDs may also have a role in conservative and post-operative management. Surgical management is deemed appropriate when conservative management fails. Excision of the elongated styloid process may occur by either a transpharyngeal (intraoral) or transcervical approach.

In conclusion, Eagle’s syndrome should be considered in the differential diagnosis for unilateral odynophagia. Appropriate clinical exam-
ination and radiological investigations should be undertaken when the clinical index of suspicion is high.

References


About the authors

Dr. Kaveshan Naidoo is a junior surgical registrar, aspiring to train vocationally in ORL-Head and Neck Surgery.

Mr. Subhaschandra Shetty, MD, FRACS, is an ORL-Head and Neck Surgery Consultant in the Department of Otorhinolaryngology, Head and Neck Surgery, splitting his time between Counties Manukau and Northland District Health Boards.

Correspondence

Dr Kaveshan Naidoo: Kaveshan.naidoo@gmail.com