

EAGLE SYNDROME: A CASE REPORT

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ABSTRACT

Background: Eagle syndrome is a constellation of symptoms that includes recurrent throat pain, foreign body sensation, dysphagia, and/or facial pain as a result of an elongated styloid process or calcified stylohyoid ligament. An elongated styloid process occurs only in about 4% of the general population.

Methods: We reviewed the case of a 27 year old female who presented with intermittent headaches, pain at the angle of the jaw bilaterally, sensation of a foreign body in the pharynx, shoulder weakness and dizziness of 15 months duration.

Results: Computed tomography scan of the skull demonstrate elongation of both styloid processes which was most marked on the left.

Conclusion: Eagle syndrome is a rare disorder. High index of suspicion is needed for its diagnosis.

Key words: Eagle syndrome, styloid process, stylohyoid ligament

INTRODUCTION

Eagle syndrome also known as **styloidcarotid artery syndrome**¹ is a rare condition characterized by styloid process elongation or compression of adjacent anatomical structures resulting from stylohyoid ligament calcification. It is associated with repeated episodes of pharyngalgia, odynophagia, the sensation of a foreign body in the pharynx, tinnitus, headaches and otalgia. Diagnosis is based on the finding a calcified stylohyoid ligament or an elongated styloid process longer than 30mm. Treatment is either conservative or by surgical excision.

We report the presentation and radiodiagnosis of this rare condition.

Case Report

S.H. is a 27 year old female who presented at the **Ear, Nose and Throat Clinic** with complaints of intermittent headaches, pain at the angle of the jaw bilaterally, sensation of a foreign body in the pharynx, shoulder weakness and dizziness of 15 months duration. She had no history of trauma or previous neck surgery.

Physical examination of the patient was unremarkable except for tenderness on palpation of

the left tonsillar fossa. An impression of ? Eagles syndrome was made. She was referred for a Computed tomography scan of the neck. The CT images complimented with volume rendered reformation showed elongation of the styloid processes beyond the normal limits with the right and left measuring 28.3mm and 37.5mm respectively (figures 1, 2 and 3).

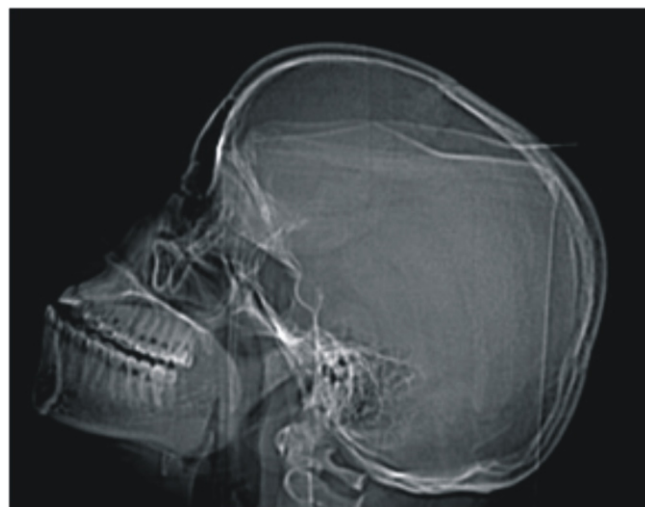


Figure 1: Lateral CT scanogram of the skull showing ossification of the stylohyoid ligament.

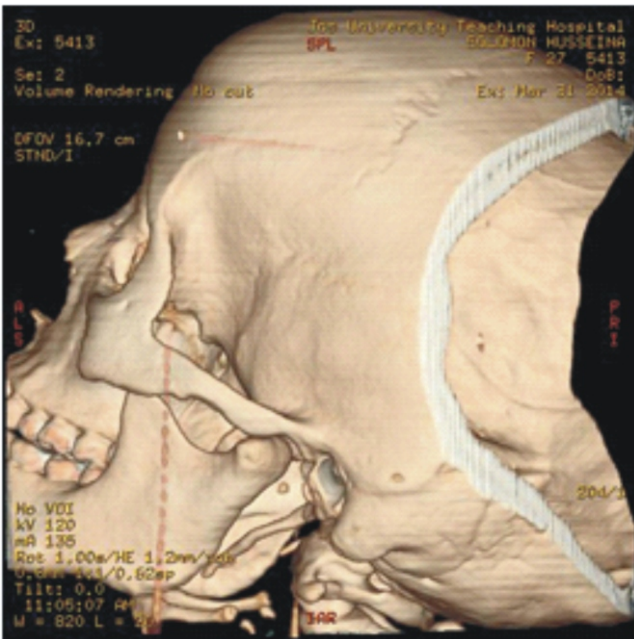


Figure 2: Three-dimensional reconstruction CT scan of the skull demonstrating elongated left styloid process (white arrow).

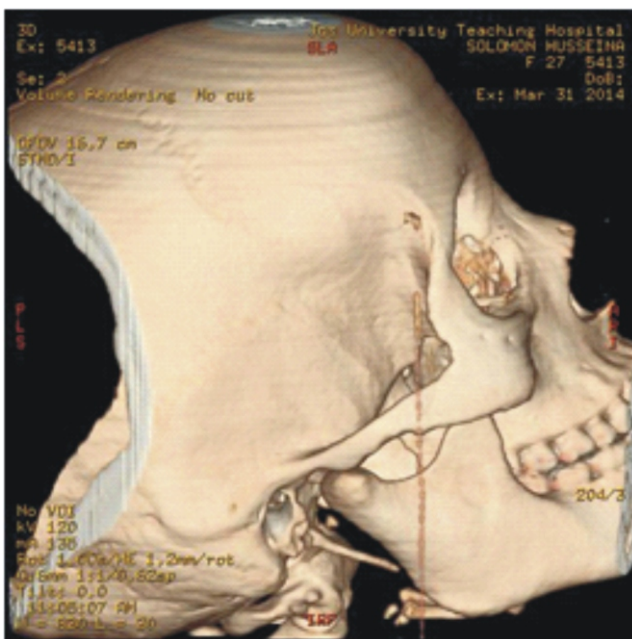


Figure 3: Three-dimensional reconstruction CT scan of the skull demonstrating elongated right styloid process (white arrow).

Discussion

Eagle syndrome is a constellation of symptoms that includes recurrent throat pain, foreign body sensation, dysphagia, and/or facial pain as a result of an elongated styloid process or calcified stylohyoid ligament.² It was first defined by an American otorhinolaryngologist Watt W. Eagle in

1937.³ An elongated styloid process occurs in about 4% of the general population, while only 4-10.3% of these patients are symptomatic.⁴ It is commoner in females between the ages of 30 to 50 years with a male to female ratio of 1:3. No significant difference is detectable between the right and left sides.⁴

Styloid process is a long, cylindrical, cartilaginous bone located on the inferior aspect of temporal bone, posterior to the mastoid apex, anteromedial to the stylomastoid foramen, and lateral to the jugular foramen and carotid canal. Medial to the styloid process is the internal jugular vein along with cranial nerves VII, IX, X, XI, and XII. The tip of the styloid process is close to the external carotid artery laterally, while medially, it is in close proximity to the internal carotid artery and accompanying sympathetic chain. It forms with the stylohyoid ligament and the small horn of the hyoid bone, the stylohyoid apparatus, which is derived from the cartilage of Reichert of the second brachial arch.^{5,6}

The actual cause of the elongation is not known, however certain theories have been proposed which include; congenital elongation of the styloid process, calcification of the stylohyoid ligament by an unknown process, and growth of osseous tissue at the insertion of the stylohyoid ligament.⁷ The mechanism by which this causes symptoms is also unclear. Theories postulated include; traumatic fracture of the styloid process causing proliferation of granulation tissue, which places pressure on the surrounding structures (compression of adjacent nerves, the glossopharyngeal, lower branch of the trigeminal, or chorda tympani), degenerative and inflammatory changes in the tendinous portion of the stylohyoid insertion, called *insertion tendonitis*, irritation of the pharyngeal mucosa by direct compression or post-tonsillectomy scarring (involving cranial nerves V, VII, IX, and X) and impingement of the carotid vessels, producing irritation of the sympathetic nerves in the arterial sheath.²

Diagnosis is based on clinical history, physical examination and radiological investigations. Plain X-rays (AP and Lateral views) and Computed tomography scan of the neck can both be used to assess the styloid process/stylohyoid ligament complex. The normal length of the styloid process in an adult is approximately 25mm. It is considered elongated when it measures greater than 30mm. Elongation can be unilateral or bilateral.^{2,8} Although Eagle syndrome is thought to be caused by an

elongated styloid process or calcified stylohyoid ligament, the presence of an elongated styloid process is not pathognomonic for Eagle syndrome because many patients with incidental findings of an elongated styloid process are asymptomatic.² When mechanical vascular compression is severe causing ischaemic symptoms, angiographic examination can be done with the patient's head positioned to reproduce symptoms may demonstrate mechanical stenosis of the carotid artery.⁸

The management of Eagle syndrome is both conservative and surgical.^{2,9} Conservative management involves reassurance and the use of analgesics to alleviate pain. In severe cases surgical excision can be performed, either via a trans-oral approach or lateral approach. Pain has been reported to persist after surgical excision in about 20% of cases.⁹

The patient was thereafter prepared for surgical excision of the abnormal styloid processes by the ENT surgeons.

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