



EAGLE'S SYNDROME TREATED BY ENDOSCOPY ASSISTED TRANSORAL STYLOIDECTOMY

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ABSTRACT

Patients with recurrent throat pain, dysphagia or cervicofacial pain symptoms might have Eagle's syndrome due to abnormal length of the styloid process or calcification of stylohyoid ligament complex. In adults, the styloid process is approximately 2.5 cm long. The etiology of this disease not well understood, and usually asymptomatic. In some cases, the styloid tip which is located between the external and internal carotid arteries, compresses the perivascular sympathetic fibers and adjacent nerves resulting in persisting pain. The disease can be diagnosed by physical examination through digital palpation of the styloid process in the tonsillar fossa or by radiographic workup. We report a 39-year-old man with an elongated styloid process having associated pain symptoms.

KEYWORDS

Eagle's syndrome, styalgia, styloidectomy

INTRODUCTION:

Styloid process (Processus styloideus) of the temporal bone is a cylindrical bony projection attached to the base of skull and situated immediately anterior to the stylomastoid foramen. It extends downwards, forwards and slightly medially. From its extremity, the stylohyoid ligament passes downwards and forwards to the lesser horns of hyoid bone. The process is covered laterally by the parotid gland, and the facial nerve crosses its base, while the tip is situated between the internal and external carotid arteries, laterally from the pharyngeal wall and immediately behind the tonsil fossa. The anterior surface of the styloid gives origin to styloglossus muscle and its tip to stylohyoid muscle. On its deep surface, the process is separated from internal jugular vein by the origin of stylopharyngeus muscle [1].

Styloid process is derived from the second branchial arch of Reichert's cartilage and is part of the stylohyoid complex along with the lesser horns of hyoid bone and stylohyoid ligament. In adults, the styloid process is normally composed of dense connective tissue but may retain its embryonic cartilage and the potential for ossification [2].

The length of styloid process is usually 2-3 cm long. When it is more than 3 cm, it is called an elongated styloid process. This elongation was first described in 1937 by Eagle who defined 'styalgia' as pain associated with abnormal length of the styloid process and later called the Eagle's syndrome [3]. Elongation of the process may cause various clinical symptoms. Patients most often complain of pain and foreign body sensation in pharynx, odynophagia, pain and buzzing in the ears, headache around the orbit or pain during head movement [4].

Case Report:

A 39-year-old man with chronic history of foreign body sensation in right side of the throat with recurrent throat pain and odynophagia for 17 years duration presented at ENT OPD. The pain was gradual in onset and progressive in nature. It was associated with headache and referred otalgia to right ear. Pain was aggravated by prolonged speaking, singing and neck movements and relieved by taking analgesics. Digital palpation of right tonsillar fossa produced pain which was relieved by local injection of 2% lignocaine. On endoscopic examination of oropharynx and laryngopharynx, there were no significant findings. Xray Styloid complex PA view showed an elongated right styloid process (Figure 1). 3D CT scan of neck revealed an elongated right styloid process (6.5 cm) extending upto the level of C3 cervical vertebra and suprahyoid epiglottis (Figure 2 and 3). All other routine investigations were within normal limits.

Endoscopy assisted Trans-oral right styloidectomy under GA was done. During the procedure, the patient was kept in Rose position, Boyle-Davis mouth gag was introduced and a vertical incision was

made 1.5 cm lateral to right anterior tonsillar pillar. The superior constrictor muscle was dissected and the right styloid process exposed. All ligaments and muscle tendons attached to styloid process were separated. The periosteum was elevated and tip of the styloid process identified. A ring curette was hooked around the tip and the styloid process skeletonized until its base (Figure 4). 4cm of the styloid process was excised using a straight artery forceps (Figure 5). Bleeding points were cauterised, the muscles and mucosa were closed in layers. Intra and post-operative periods were uneventful.

The patient was discharged on pod-4 with no record of bleeding, oedema or haematoma. A week after the surgery, a follow up visit to ENT OPD showed an almost complete healing of incision site. The patient reported some localized symptoms of throat pain on the right side of the neck. On the following weeks of a routine follow-up visit, the patient reported no further symptoms of odynophagia or cervicofacial pain.

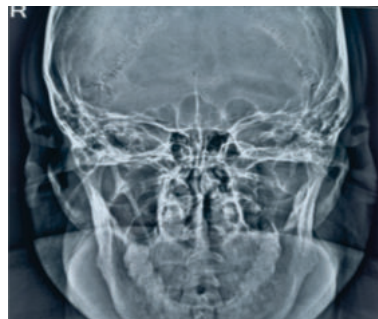


Figure 1, X-ray styloid complex PA view showing an elongated right styloid process.

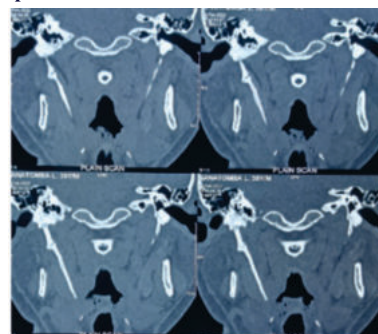


Figure 2, CT scan neck showing an elongated right styloid process

(6.5 cm) extending upto the level of suprahyoid epiglottis with calcification of left stylohyoid ligament.

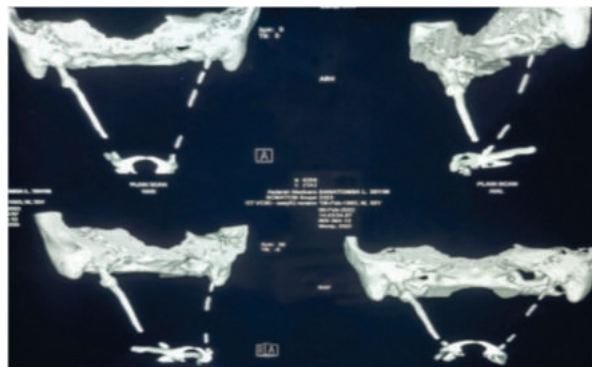


Figure 3, 3D CT scan neck showing an elongated right styloid process and a calcified left stylohyoid ligament.



Figure 4, intra-op endoscopic picture showing exposed elongated right styloid process.



Figure 5, excised right styloid process (4cm).

DISCUSSION:

Eagle's syndrome includes the elicitation of recurrent throat and ear pain on swallowing, turning the head, or extending the tongue, but it can present with a wide range of general head and neck symptoms that blur the finding of a specific diagnosis. Eagle's syndrome should be considered when patients present with symptoms that could be related to head position. Symptoms usually include pain in the throat and the neck that ranges from mild discomfort or a bruised feeling to severe burning, throbbing pain, often associated with headache, all of which may be worse after sleeping. The feeling of a lump in the throat and pseudodysphagia may also be a feature of Eagle's syndrome [5].

Eagle defined the length of a normal styloid process to be 2.5-3cm. The cause of this elongation of the styloid process may be idiopathic, congenital (due to the persistence of cartilaginous elements of precursors of the styloid process), or acquired (due to the proliferation of osseous tissue at the insertion of the stylohyoid ligament).

An elongated styloid process occurs in about 4% of the general population, while only small percentages (between 4% and 10%) of these patients are symptomatic. Most of the reported cases are an incidental finding in radiographs. Diagnosis is supported by description of symptoms by patients, previous history of any cervical

trauma and tonsillectomy, physical examinations and radiographs. Palpation of the styloid process in the tonsillar fossa is indicative of elongated styloid in that processes of normal length are not normally palpable. Palpation of the tip of the styloid should exacerbate existing symptoms. The symptoms have varied pathophysiological explanations, for example, symptoms may be due to: 1) fracture of the styloid process leading to granulation tissue and pressure on surrounding structures; 2) compression of adjacent nerves e.g. the glossopharyngeal, the lower branch of the trigeminal, or the chorda tympani; 3) degenerative and inflammatory changes at the tendinous portion of the stylohyoid insertion; 4) irritation of the pharyngeal mucosa due to direct compression, or post tonsillectomy scarring involving the cranial nerves V, VII, IX and X; 5) impingement of the carotid vessels with irritation of the sympathetic nerves in the arterial sheath [6].

Surgical resection of elongated styloid process is the primary treatment for Eagle's syndrome. Even though medical treatment using analgesic or local steroid injection is an option, the condition is not yet proven to be well treated or resolved. There are two surgical methods that have been suggested : transoral and external transcervical approaches. Transoral resection, as described by Eagle, is technically easier, less time consuming and cosmetically preferred though it gives poor visualization of the surgical field. Transcervical approach gives good visualization but has disadvantage of an external surgical scar, longer duration of surgery and risk of injury to facial nerve. Surgical failure rate is around 20% by means of partial relief of or recurrence of symptoms and can be due to inadequate shortening leading to constant irritation [7].

A scientific debate exists on whether an incidental finding on radiographs of an elongated styloid process should be excised to minimize the risk of eagle syndrome or should we leave it untouched and follow up the patient for development of stylalgia. In our case, we have performed an endoscopy assisted transoral excision of a patient who presented with stylalgia and on regular post-operative follow up for 3 months, the patient showed complete relief of the oropharyngeal and cervico-facial symptoms and complete improvement in functional ability.

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