

(CASE REPORT)



Eagle's syndrome (Elongated styloid process) an unrecognized rare cause of neck pain: A case illustration

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Abstract

Eagle syndrome is a rare condition characterized by an abnormally elongated styloid process with or without abnormal direction and/or ossification of the styloid ligament.

45-year-old men with the complaint of left-sided neck pain below the ear for 3 years. The diagnosis of cervical arthrosis was made and physiotherapy was advised for 2 years. Three-dimensional Computed tomography scan revealed bilateral elongated styloid processes: both styloid processes were found to be longer than normal. No vascular compression was documented. Surgery was advised but the patient has refused. The management was conservative with non-steroid analgesics and antalgics. These symptoms are not specific because the symptoms related to this condition can be confused with those attributed to a wide variety of disorders including facial neuralgias, oral, otologic, and spinal diseases. Diagnosis is made with appropriate radiological examination specially cranial 3D CT scan.

The treatment of Eagle's syndrome is primarily surgical. The styloid process can be shortened through an intraoral or external approach.

Neurosurgeons, Otolaryngologists, and dental surgeons should be aware of the existence and incidence of this clinical entity, which is associated with reduced quality of life.

Keywords: Eagle's syndrome; Elongated styloid process; Cervical pain; Unilateral neck pain; 3D CT-scan

1. Introduction

Eagle syndrome is a rare condition characterized by an abnormally elongated styloid process with or without abnormal direction and/or ossification of the styloid ligament [1-4]. If the styloid process is longer than 30 mm, it is considered to be an elongated styloid process and can be the source of craniofacial and cervical pain. These symptoms are non-specific and can be confused with a wide variety of disorders including facial neuralgias, oral, otologic, and spinal diseases [5,6].

Here, we present the case of a 45-year-old men with the complaint of left-sided neck pain below the ear for the 3 years. The diagnosis was unrecognized for three years.

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2. Case report

45-year-old men with the complaint of left-sided neck pain below the ear for 3 years. The diagnosis of cervical arthrosis was made and physiotherapy was advised for 2 years. But the patient reported no amelioration. Neck examination was also normal. The neurological exam was unremarkable. The somatic examination was normal except for submandibular local tenderness. Routine blood investigations were normal.

Three-dimensional Computed tomography (CT) scan revealed bilateral elongated styloid processes: right styloid process measured 45 mm and left styloid process measured 48 mm (Figure 1). Both styloid processes were found to be longer than normal. No vascular compression was documented. Surgery was advised but the patient has refused. The management was conservative with non-steroid analgesics and antalgics. Only some stabilization with partial amelioration was noted.

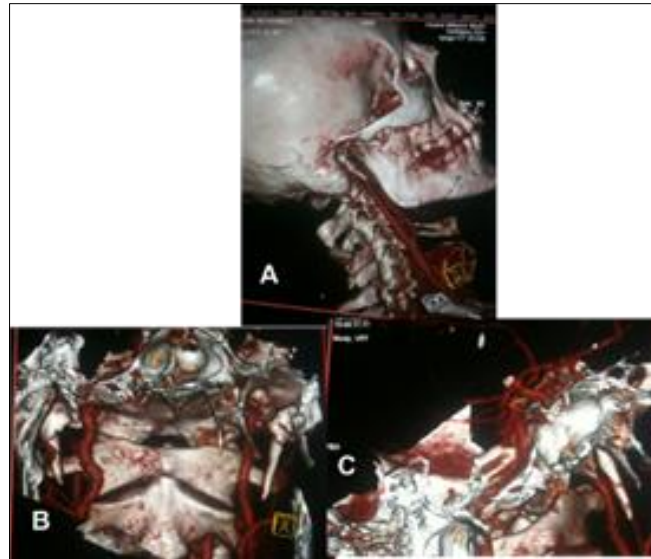


Figure 1 (A) Three-dimensional CT reconstruction showing the elongated right and left elongated styloid process. (B and C) coronal view and sagittal 3D CT scan reconstruction. Elongated styloid process (Eagle Syndrome).

3. Discussion

Eagle syndrome (elongated styloid process) was initially described by Watt Weems Eagle who was an American otorhinolaryngologist. It is an abnormality of ossification/morphology of the styloid process [1-4]. The styloid process is a slender outgrowth at the base of the temporal bone, immediately posterior to the mastoid apex. Normally, the length of the styloid process ranges from 25 to 30 mm. It lies caudally, medially, and anteriorly toward the maxilla-vertebro-pharyngeal recess (which contains the carotid arteries, internal jugular vein, facial nerve, glossopharyngeal nerve, vagal nerve, and hypoglossal nerve). If the styloid process is longer than 30 mm, it is considered to be an elongated styloid process. The styloid process is derived from the temporal bone. Between the internal and external carotid arteries lies the apex of the styloid process which is clinically important [5].

The incidence of elongated styloid process ranges from 4-7%, of which only 4% of the patients are symptomatic [3]. In addition to neck pain, otalgia, tinnitus, and dysphagia can also occur. An elongated styloid process or aberrant ossified stylohyoid ligament can cause various symptoms, varying from benign to seriously damaging. In general, the literature describes two forms of Eagle syndrome: the classical syndrome, and the stylocarotid syndrome. Patients with classic Eagle syndrome often present with pain, dysphagia, and foreign body sensation immediately the following tonsillectomy, whereas pain, visual disturbances, and syncope due to carotid artery compression are features of the stylocarotid syndrome. The classic type with various head-and neck complaints like pain and dysphagia and the vascular type with mainly neurological symptoms.

These symptoms are non-specific and can be confused with a wide variety of disorders including facial neuralgias, oral, otologic, temporomandibular, and spinal diseases [1, 4]. This condition is characterized by dull, nagging, pharyngeal pain and a palpatory finding in the tonsillar fossa. In case of impingement of the internal carotid artery, patients often

refer to supraorbital pain and parietal headache. In case of external carotid artery irritation, the pain radiates to the infraorbital region. [6, 7].

Eagle's syndrome should always be suspected, mostly in adult women when the pain is unilateral and not responsive to painkillers. As palpation of the tip of the SP can exacerbate existing symptoms, a three-dimensional CT-scan is the most valuable diagnostic tool. Physical examination and clinical history are useful diagnostic tools of an elongated styloid process.

Radiologically: CT of the head/neck and especially 3D-CT scan is considered as the gold standard for visualization of the anatomically complex styloid process, CT scanning (and in particular three-dimensional [3-D] CT scanning) represents an extremely valuable imaging tool in patients with Eagle syndrome, offering an accurate evaluation of the styloid process about its anatomical relationship with the other head and neck structures. Orthopantomogram (panoramic view) is that the entire length of the process can be seen very distinctly and its deviation can also be made out clearly.

The differential diagnosis for Eagle syndrome includes temporal arteritis, glossopharyngeal and trigeminal neuralgia, cluster headache, migraine, pain related to unerupted third molars, cervical arthritis, tumours, and ill-fitting or missing dentures.

The first step toward the treatment of Eagle syndrome is conservative management using analgesics. If conservative measures fail, the final treatment involves resection of the elongated part of the styloid process. Intraoral transtonsillar and transcervical are two surgical approaches for the treatment of Eagle syndrome (1). The Follow-up is good. This surgery has benefited from advances in 3D printing to personalize the type of surgery to be performed in some cases (5).

4. Conclusion

Internists, Neurosurgeons, Otolaryngologists, neurologists, and dental surgeons should be aware of the existence and incidence of this clinical entity, which is associated with reduced quality of life.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflicts of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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