

# Eagle's Syndrome: A Case Report of a Bilateral Elongated Styloid Process

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## Abstract

Eagle's syndrome is symptomatic of the styloid process (SP) elongation or calcification of the stylohyoid and stylomandibular ligaments. As a result of Eagle's various studies, 4 out of every 100 patients showed that the styloid process was long. However only 4% of these cases are symptomatic [1]. Surgical traumas such as tonsillectomy or stylomandibular chronic irritation of the ligament, proc. of styloideusosteitis, ossifying periosteitis, tendinitis or mucositis why could it be [2]. The main symptoms are facial pain, dysphagia, sore throat, earache and headache. It may be unilateral or bilateral. The styloid process can be shortened through an intraoral or external approach. The case of Eagle syndrome in a 39-year-old female patient who was diagnosed to have bilateral elongated.

## Keywords

Eagle's Syndrome, Throat Pain, Elongated Styloid Process, Extraoral Approach

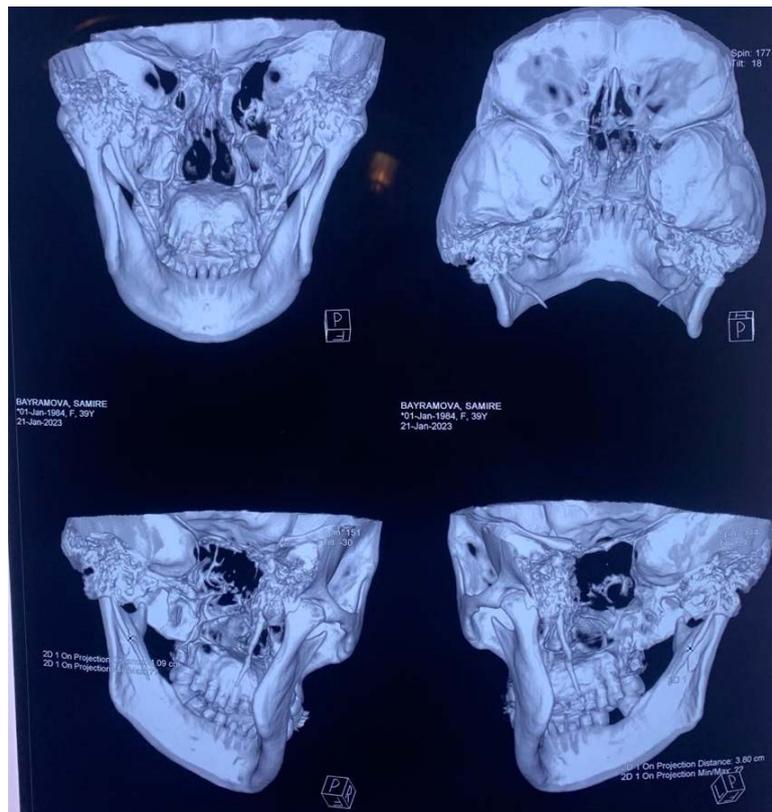
## 1. Introduction

Eagle syndrome is due to a calcified stylohyoid ligament or an elongated styloid process [3]. The styloid process is a pointed part of the temporal bone that serves as an anchor point for several muscles associated with the tongue and larynx. Otorhinolaryngologist named Eagle first described a syndrome characterized by an elongated styloid process and pain in the cervicofacial region [3]. Eagle syndrome is characterized by recurrent pain in the middle part of the throat and face. Classic Eagle syndrome is typically seen in patients after throat trauma or tonsillectomy. A second form of Eagle syndrome unrelated to tonsillectomy causes compression of the vessel that carries blood to the brain, neck, and face (carotid artery). This form can cause headache and dizziness. As a re-

sult of the various studies Eagle has done, 4 out of every 100 patients indicated that the styloid process was long. However only 4% of these cases are symptomatic [4]. We encounter this situation more in women than in men and the average age of the patients presenting with symptoms is usually 40 years. The normal styloid process length ranges between 2 cm and 3 cm, and it is considered elongated when it is longer than 3 cm [3] [4].

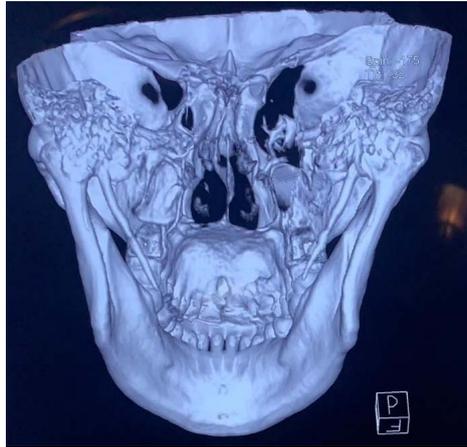
## 2. Case Presentation

A 39-year-old female patient has been on the left side of the neck for approximately 7 years unilateral, occasionally swallowing, extending from the back of the mandible to the side of the neck with the complaint of pain that causes difficulty and gives a foreign body sensation applied to our clinic. In her anamnesis, the patient reported that she had undergone tonsillectomy 6 years ago due to these pains. But the complaints started to increase even more after the surgery. On palpation, in the right and left tonsillar fossa, in the styloid process elongation was felt, it was seen to be painful only on the left side, and Eagle's syndrome was suspected at the diagnosis. 3D maxillofacial CT was requested from the patient to confirm the diagnosis and left styloid process ~40 mm (longer than normal), right styloid process measured ~38 mm (longer than normal), calcification at the hyoid bone attachment sites in the bilateral stylohyoid ligament was noted (Eagle syndrome) has been reported as (Figure 1 and Figure 2).



**Figure 1.** 3D-CT images of a 39-year-old female patient.

The patient underwent styloid process resection with extraoral—transcervical approach under general anesthesia (**Figure 3** and **Figure 4**). Intraoperative complications in our patient in the postoperative period did not develop. The left styloid process removed (**Figure 5**). The patient's complaints of pain resolved in the postoperative period.



**Figure 2.** 3D-CT images of a 39-year-old female patient. Left styloid it is observed that the process is longer than the right styloid process (left SP: 40 mm, right SP: 38 mm).



**Figure 3.** Transcervical incision line.



**Figure 4.** Intra Op view.



**Figure 5.** Resected styloid process.

### 3. Discussion

Eagle's syndrome, characterized by pain secondary to stimulation of the cranial nerves, caused by the long styloid process or the calcified stylohyoid ligament. Pain in the cervicofacial region that can spread to the ear, neck, temporomandibular joint or upper extremity, change with head position, difficulty in swallowing and throat [5]. It is a disease that can give a foreign body sensation. The styloid process is a cylindrical bone located on the inferior aspect of the temporal bone, anterior to the stylomastoid hole, structure and continues as the stylohyoid ligament attaches to the small horn of the hyoid bone [6]. Elongation of the styloid process or ossification of the stylohyoid ligament downwards from the skull base and is usually bilateral [7].

Apex of the styloid process, internal and external carotid clinically because it extends between arteries is important. Glossopharyngeal nerve, close to the jugular foramen extending just below the styloid process, the accessory and vagus nerves pass medial to the styloid process. The incidence of elongation in the styloid process in the literature is it 1.4%-varies between 30% [7]. Corell *et al.* in their study, the frequency of elongation in the styloid process was 18.2% and reported that 93% of them were bilateral [7] [8].

Long styloid process explains the pathogenesis of Eagle's syndrome due to the low incidence of symptoms alone is not sufficient. Surgical procedures such as tonsillectomy and local chronic irritations of the stylohyoid cause reactive ossifying hyperplasia of the complex [9]. It has been claimed that. In our case, there is tonsil operation in the patient's history. Among the differential diagnoses of Eagle's syndrome, cervical myofascial pain syndrome, migraine, neuralgias (trigeminal, glossopharyngeal, nervusintermedius), nasopharyngeal mass/lesion, tonsillitis, otitis, causing neck pain degenerative diseases, psychosomatic diseases, vascular disorders (atherosclerosis), laryngopharyngealdysesthesia, sphenopalatine ganglion neuralgia, chronic tonsillopharyngitis, hyoid bursitis, Sluder's syn-

drome, histamine cephalgia, cluster headache, esophageal diverticulum, temporal arteritis, cervical spinal arthritis, benign or malignant neoplasms, dental induced pain and temporomandibular joint problems should be considered in the differential diagnosis. In order to distinguish Eagle's syndrome from other conditions with similar symptoms, clinical diagnosis should be made. In general, 3 criteria have been determined: increasing with swallowing a characteristic blunt, persistent pain, palpable in the tonsillar fossa elongated styloid protrusion and panoramic film or styloid measured longer than 30 mm on computed tomography protrusion exists.

In our case styloid processes identified by cone-beam computed tomography, precise lengths are tapered measured by beam computed tomography.

Although the treatment of Eagle's syndrome varies according to the degree of discomfort of the patient, in most cases it is surgical resection [3]. In our case, after surgical resection the patient's symptoms improved.

#### 4. Conclusion

As a result, CT was requested from the patient who applied to our clinic with complaints of difficulty in swallowing and sore throat. The patient was diagnosed with Eagle syndrome. We see it a lot in patients who apply to our clinic with such pain. Therefore, it is difficult to diagnose Eagle's syndrome. For this, a wide anamnesis should be taken from the patient and the diagnosis should be confirmed by computed tomography 3D reconstruction. For this, a wide anamnesis should be taken from the patient and the diagnosis should be confirmed by computed tomography 3D reconstruction.

#### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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