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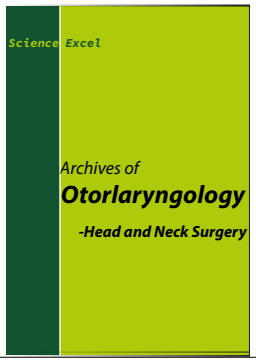
Case Report



Bilateral Eagle Syndrome : About a Case

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Abstract

Introduction: Eagle's syndrome is a rare condition caused by elongation of the styloid process or calcification of the styloid ligament. It typically presents with non specific cervical pain, which can be disabling. **Case report:** We report a case of 73-year-old patient with marked bilateral elongation of styloid process (63mm on the right, 68mm on the left) associated with right-sided symptoms. Cervical CT confirmed the diagnosis and also revealed degenerative cervical spine changes. **Results:** The patient underwent surgical treatment via transoral approach. Postoperative follow-up showed complete resolution of symptoms. **Conclusion:** Although rare and frequently underdiagnosed, Eagle syndrome should be considered in cases of persistent cervical pain. CT Imaging plays a key role in diagnosis. Surgical treatment often provides significant and lasting symptom relief.

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Introduction

Eagle syndrome, also known as elongated styloid process, groups together a range of painful manifestations in the head and neck area. It results either from an elongation of the styloid process or an ossification of the stylohyoid ligament [1,2]. This clinical situation was initially described by Eagle in 1937 [3]. The etiology of the syndrome remains controversial and is the subject of several pathophysiological hypotheses [2,4]. Its incidence varies according to the populations studied. Eagle reported a prevalence of 4%, while Kaufman found it to be 7% [5]. This condition can occur at any age, and its incidence increases with age [2]. A female predominance is regularly observed in published series [6].

The clinical presentation is variable. Imaging, particularly ct scan, generally allows visualization of an elongation of the styloid process, which may or not be associated with calcification of the stylohyoid ligament. There is no clear consensus regarding the pathological length of the styloid process, although most authors consider a measurement greater than 25 mm as a diagnostic criterion [7,8,9]. This condition is often bilateral, but symptoms are generally unilateral [7 ;6]. Management is based on medical treatment aimed at relieving symptoms, and in cases of failure or severe symptoms, surgical treatment aimed at shortening or resecting the styloid process.

Observation

73-year-old female patient, with a medical history of dyslipidemia treated with statins at a dose of 10 mg/day, gastritis on a hiatal hernia, hypertension treated with an angiotensin-converting enzyme inhibitor (ACEI) at 10 mg/day, and followed in ophthalmology for glaucoma and cataract. She presents with spontaneous cervical pain that is worse upon waking and partially relieved by the use of nonsteroidal anti-inflammatory drugs. These pains are frequently associated with helmet-like headaches. Clinical examination reveals no particular abnormalities. A cervical spine CT scan (Figures 1 and 2) was performed, showing hypertrophy of the styloid process with bilateral ossification of the stylohyoid ligament measuring 63 mm on the right with an inferior edge curved backward and 68 mm on the left. Additionally, there is bilateral uncovertebral arthrosis at C4-C5 and right-sided C5-C6, as well as bilateral facet joint arthrosis from C2-C3 to C5-C6.

A surgical indication was established due to the persistence of symptoms despite well-managed pain treatment. The chosen surgical approach was intraoral, starting with a tonsillectomy, followed by a styloidectomy through dissection of the muscles of the tonsillar fossa, allowing the styloid process to be exposed (Figure 3) and then the distal portion to be cut as close as possible to its proximal insertion (Figure 4). The tip of the residual portion was smoothed

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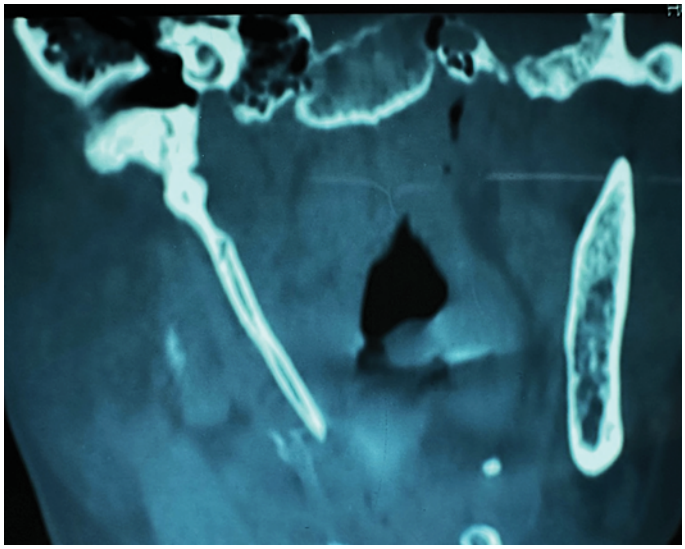

***Figure 1**. Cervical CT scan in 3D reconstruction showing an elongation of the styloid process on the right.*

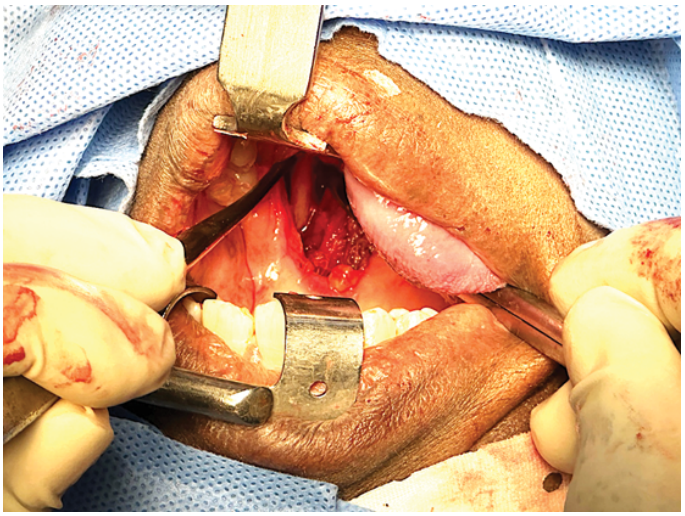

***Figure 3**. Operative view showing the right elongated styloid process.*

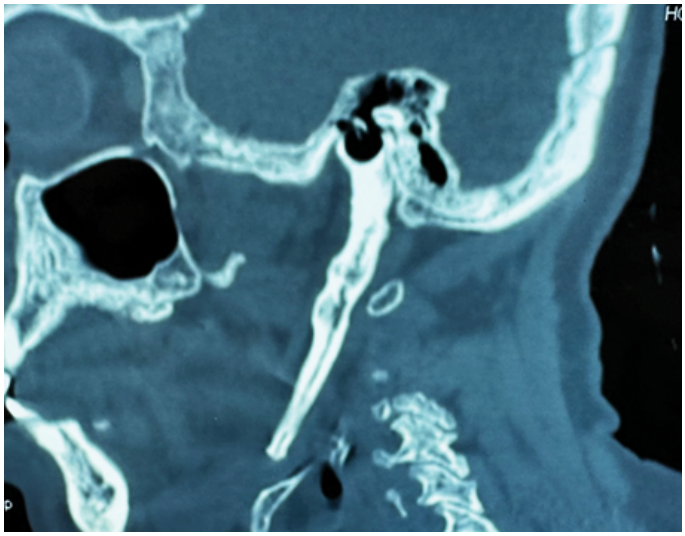

***Figure 2**. Cervical CT scan in 3D reconstruction showing an elongation of the left styloid process*

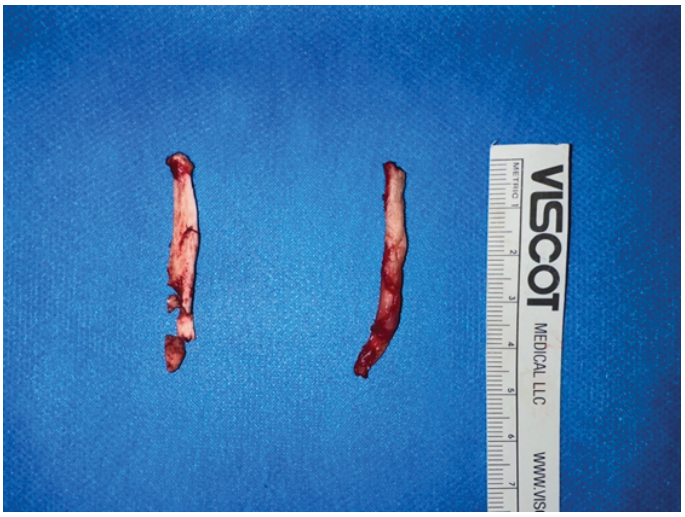

***Figure 4**. Operative specimen showing bilateral elongation of the styloid process.*

using a surgical rasp. The closure of the tonsillar fossa was performed with separate sutures using resorbable thread.

The immediate postoperative course was marked by the occurrence of an infection at the surgical site, manifested by pain, local congestion, and purulent discharge, as well as vomiting and headaches. The outcome was favorable under antibiotic and antiemetic treatment. At the last follow-up, the patient no longer had any complaints, the pain had completely disappeared, and the clinical examination was unremarkable with satisfactory healing of the tonsillar beds.

Discussion

Epidemiological aspects

The prevalence of elongated styloid process (ESP) varies widely in the literature. Eagle [3] and Igüy [10] reported frequencies of 4% and 3.4%, respectively, whereas Correll and al. [7] and Phulambrikar and al. [11] observed significantly higher frequencies, reaching 18.2% and 24.8%. This discrepancy is explained by the lack of consensus on the pathological length of the styloid process, often considered abnormal beyond 25 mm [7,12]. Although ESP is mostly bilateral, symptoms are

usually unilateral [4]. In our case, the patient had bilateral ESP measuring 63 mm on the right and 68 mm on the left, far exceeding the thresholds adopted by most authors. Eagle's syndrome more commonly affects women, with the mean age of onset around 40-45 years [9,10,13]. The late onset of symptoms in our 73-year-old patient suggested a slow progression of stylohyoid ligament ossification with age, which explains its increased prevalence in older patients [8].

Clinical aspects

The clinical manifestation is polymorphic and often non-specific. Cervicofacial, oropharyngeal, or otologic pain is common, sometimes accompanied by headaches [14-16]. No correlation has been demonstrated between the intensity of the pain and the degree of elongation of the styloid process [17]. Palpation of the tonsillar fossa may sometimes reveal a bony prominence or reproduce the pain [18]. The clinical examination was normal in our case.

Radiological aspects

Cervical computed tomography (CT), particularly with three-dimensional reconstruction, is the reference exam to confirm an elongated styloid process (ESP). It allows for precise evaluation of the length, orientation, and anatomical relationships of the styloid process [6,19]. In our case, imaging revealed bilateral ESP, associated with signs of cervical degeneration (uncarthrosis and zygapophyseal osteoarthritis), highlighting the importance of imaging in the overall assessment of pain. The literature proposes varying elongation thresholds, ranging from 30 mm to 40 mm [2,19, 20]. Bilaterality is common, observed in 77 to 85% of cases [7,21].

Therapeutic management

First-line medical treatment, including the administration of analgesics, anti-inflammatories, as well as local injections of corticosteroids or anesthetics [22] in our case; the absence of improvement under symptomatic treatment justified the surgical decision.

Surgical treatment: is indicated in cases of failure of medical treatment or disabling symptoms. Two classic approaches are described:

- the external cervical approach: More invasive, allows better exposure of the operative field and permits safe dissection. However, it is associated with increased risks of scar and neurological complications, especially facial nerve injury [14, 22, 23].

- the intraoral approach: Chosen in our case, it is less invasive and more aesthetic, but presents some limitations, notably a restricted operative field and a risk of deep space infection [12, 22, 24].

Our patient underwent resection of the styloid process via an intraoral approach following tonsillectomy. The postoperative course was marked by a local infection that was quickly controlled with antibiotic treatment. Clinical follow-up showed complete resolution of symptoms with satisfactory healing. These results are consistent with the literature, which indicates that the majority of patients report significant, sometimes definitive, improvement after surgery [18, 25].

Conclusion

Although rare and frequently underdiagnosed, Eagle syndrome should be considered in cases of persistent cervical pain. CT Imaging plays a key role in diagnosis. Surgical treatment often provides significant and lasting symptom relief.

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