

Facial pain due to elongated styloid process

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Abstract

Pain is the most frequent cause of suffering and disability. The etiology of orofacial pain is still elusive. However, the etiology has to be ascertained for definitive treatment. Only after a systematic and careful evaluation can a treating surgeon be aware of the underlying cause. Though dental causes predominate in the diagnosis of orofacial pain, the rare cause of facial pain have to be excluded, which would prevent unnecessary and fruitless dental treatment. The present case is an example of a rare condition that may be overlooked during examination. This paper will describe a case of vague unilateral orofacial pain, the diagnosis of which zeroed down to an elongated styloid process.

Keywords: Eagle syndrome, orofacial pain, styloid process

Introduction

Pain is the most frequent cause of suffering and disability. Misdiagnosis and multiple failed treatments are common in some patient population. Patients with orofacial pain frequently undergo numerous dental procedures that fail to eliminate symptoms, and are often referred to the oral and maxillofacial surgeon for evaluation and treatment. Facial pain can be the presenting, and sometimes the only, complaint of many disorders that originate from cranial structures. In the clinical setting, the identification of the underlying cause, and therefore the decision about the investigations needed, occasionally represents a challenge, even for experienced surgeons.

Patients with pharyngodynia, neck, and facial pain can lead to an extensive differential diagnosis. An elongated styloid process may be taken in account. American otorhinolaryngologist Watt Weems Eagle in 1937 defined "stylalgia" as an autonomous entity related to abnormal length of the styloid process or to mineralization of the stylohyoid ligament complex.^[1-3] The stylohyoid complex

derives from Reichert's cartilage of the second branchial arch. The styloid process is an elongated conical projection of the temporal bone that lies anteriorly to the mastoid process. Its elongation may be associated by pharyngodynia localized in the tonsillar fossa and sometimes accompanied by dysphagia, odynophagia, foreign body sensation, and temporary voice changes. In some cases, the stylohyoid apparatus compresses the internal and/or the external carotid arteries and their perivascular sympathetic fibers, resulting in a persistent pain irradiating in the carotid territory.^[4-6]

An elongated styloid process occurs in about 4% of the general population while only a small percentage (between 4% and 10.3%) of these patients is symptomatic. Hence, the true incidence is about 0.16%, with a female-to-male predominance of 3:1.

The etiology of the elongation is debatable.

In 1937, Eagle described two possible clinical expressions attributable to elongated styloid process^[7] as follows:

- The "classical Eagle syndrome" is typically seen in patients after pharyngeal trauma or tonsillectomy, and it is characterized by ipsilateral dull and persistent pharyngeal pain, centered in the ipsilateral tonsillar fossa, that can be referred to the ear and exacerbated by rotation of the head. A mass or bulge may be palpated in the ipsilateral tonsillar fossa, exacerbating patient's symptoms. Other symptoms include dysphagia, sensation of foreign body in the throat, tinnitus or cervicofacial pain.
- The "second form" of the syndrome ("stylocarotid syndrome") is characterized by the compression of the internal or external carotid artery (with their peri-vascular sympathetic fibers) by a laterally or medially deviated styloid process. It is related to a pain along the distribution of the artery, which is provoked and exacerbated by rotation and compression of the neck. It's not correlated with tonsillectomy. In case of

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impingement of the internal carotid artery, patients often complain of supraorbital pain and parietal headache. In case of the external carotid artery irritation, the pain radiates to the infraorbital region.

The elongated process is treated surgically and non-surgically. A pharmacological approach by transpharyngeal infiltration of steroids or anesthetics in the tonsillar fossa has been used, but styloidectomy is the treatment of choice. Styloidectomy can be performed by an intraoral or an extraoral approach. The intraoral approach may result in a restricted operative field, in the possibility of an incomplete control over many important vascular and nervous structures and in the risk of deep cervical infections. On the other hand, external surgical approach results in cutaneous scars, longer hospitalization, and risks of facial nerve injuries. The treatment's choice usually depends on the experience of the surgeon.

Case Report

A 45-year-old female patient reported to our maxillofacial unit with the chief complaint of pain on swallowing, a swelling in the throat, and vague facial pain over the right face and temple region. The pain never crossed midline. She also complained of pain on turning the head toward the left side and some unusual sensation in the tongue. These complaints, according to the patient, had been for 2 years. She had been administered non steroidal anti-inflammatory drugs, carbamazepine by some practitioners without any response.

After a series of questioning and examination, a mass was palpable in the right tonsillar region. She did not have any extra-oral swelling or asymmetry. Her cervical lymph nodes were not palpable. All teeth were present and in good shape. It was easy on our part to rule out odontogenic pain. She neither had any history of tonsillar surgery nor could she remember any history of trauma. Her computed tomography (CT) scan revealed an elongated styloid process (33 mm) of the right side [Figure 1]. The temporomandibular joint appeared normal. She was planned for resection of the styloid process [Figure 2a-c]. An extraoral approach was carried out for the resection. She did not sustain any injury to the facial nerve or any vessels. The patient has been under regular follow-up and is free of the pre-operative symptoms .

Discussion

An elongated styloid process must always be considered in the differential diagnosis of orofacial and neck pains.

Eagle defined the length of a normal styloid process at 2.5-3.0 cm. The normal length of the styloid process varies greatly as follows:

1. From 1.52 cm to 4.77 cm, according to Moffat *et al.* (1977)^[8]
2. Less than 3 cm, according to Kaufman *et al.* (1970)^[9]
3. From 2 cm to 3 cm, according to Lindeman (1985).^[10]

This case has mixed characteristics such as dysphagia/odynophagia, feeling of foreign body, which fit into the classical variant. It also has features like pain on rotation of the head and peritonsillar pain not related to tonsillectomy, which fit into the stylocarotid variant.

The diagnosis of the trait has to rely on thorough physical examination and radiography. A plain computed tomography scan and an orthopantomogram served our purpose. 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 surgical treatment is the first choice in the literature.



Figure 1: Coronal view computed tomography scan showing elongated right styloid process measuring 33 mm

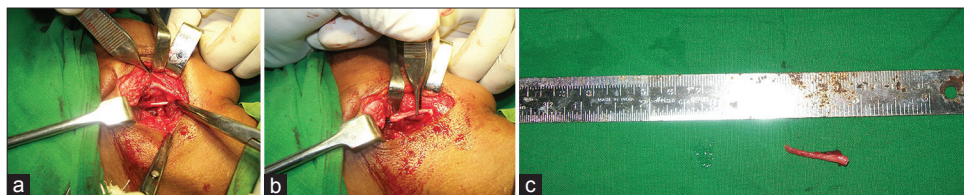


Figure 2: (a) Intraoperative exposure of the styloid process. (b) Intraoperative excision of the styloid process. (c) Excised styloid process

Conclusion

While establishing the differential diagnosis for orofacial pain, the history, clinical examination and relevant investigation have to be given due importance. Though, it is a common belief that common causes should be expected first, rare, non-dental causes of oro facial pain as described in the case must be distinguished to avoid unnecessary dental treatment and also helps in appropriate referral. Though uncommon, an elongated styloid process should be considered in the differential diagnosis of orofacial pain. An alert and responsible maxillofacial surgeon should always bear this probability when dealing with such cases.

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