ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 8, Issue – 6, December - 2025, Page No.: 330 – 333

Eagle's Syndrome - A Case Report

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How to citation this article: Dr. Shreya Khandedhia, Dr. Saba Khan, Dr. Tulika Sharma, Dr. Nishita Gautam, "Eagle's Syndrome - A Case Report", IJMACR- December - 2025, Volume – 8, Issue - 6, P. No. 330 – 333.

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Eagle's syndrome (ES) occurs when an elongated styloid process or calcified stylohyoid ligament causes recurrent throat pain or foreign body sensation, dysphagia, or facial pain. Additional symptoms may include neck or throat pain with radiation to the ipsilateral ear. The symptoms related to this condition can be confused with those attributed to a wide variety of facial neuralgias. ES can be diagnosed radiologically and by physical examination. The treatment of ES is primarily surgical. The styloid process can be shortened through an intraoral or external approach. In this paper a case of ES exhibiting bilateral elongation of styloid process is reported and the literature is reviewed.

Keywords: Eagle syndrome, styloid process, mandible.

Introduction

Eagle's syndrome, defined by Eagle in 1949, is characterized by morphological abnormality/ossification of the styloid process. The average length of the styloid process is 20- 30 mm in the adult Caucasians and 15.4-18.8 mm in the Asian population. An elongated styloid process is defined by being at least 30 mm long.[1] The aetiology is not well defined and a number of theories have been suggested, such as congenital elongation due to the persistence of an embryonic cartilaginous outgrowth, calcification of the stylohyoid ligament and formation of bone tissue at the insertion of the ligament. This is attributed to the fact that as age advances, the

elasticity of the soft tissues and the associated ligaments is lost, putting increased pressure on the adjoining hard tissues.[2] The presenting symptoms include dull, aching pain on either side of the throat, difficulty in swallowing, foreign body sensation in the throat, pain in the facial region, and recurrent headache and vertigo. Since these symptoms mimic many maxillofacial and oropharyngeal disorders and neuralgias, a thorough clinical history, examination, and radiological assessment are necessary for attaining a diagnosis. Here, this article present one such case of Eagle's syndrome in a young female patient and explain the diagnosis and successful management of the same.[3]

Case report

Clinical Findings

A female patient named Kankubai reported to the Department of Oral Medicine and Radiology, Darshan Dental College and Hospital, Udaipur, with a chief complaint of pain on the right side of the neck for the past 1–2 months. The pain was described as *stabbing* in nature, non-responsive to analgesics, occurring 10–20 times per hour, and subsiding only while at rest. The pain was aggravated on turning the head to the left, yawning, crying, and swallowing, accompanied by a foreign body sensation in the throat.

On general examination, the patient was conscious, cooperative, and well-oriented, with normal gait and posture. Vital signs were within normal limits: Pulse rate – 70 bpm; Blood pressure – 128/70 mmHg; Respiratory rate – 16 breaths/min; Temperature – 98.3°F. Height: 5'2"; Weight: 57 kg.

Diagnostic Assessment

Extraoral examination revealed tenderness on palpation in the infra-auricular region and angle of the mandible on the right side. [Figure 1] Intraoral examination showed no abnormality in the tongue, palate, or buccal mucosa. However, gingival inflammation and recession were noted in relation to teeth 16 and 21, along with generalized calculus deposits.

Figure 1: Pre-operative picture of the patient.

A panoramic radiograph (OPG) ruled out osteo-dental abnormalities [Figure 2]. CT imaging of the skull base excluded any expansive or osteolytic lesions. Image analysis revealed an elongated right styloid process and a calcified stylohyoid ligament on the right side measuring 49.3 mm, whereas the left side measured 33.6 mm [Figure 2]. Based on these findings, a confirmatory diagnosis of Eagle's Syndrome was established.

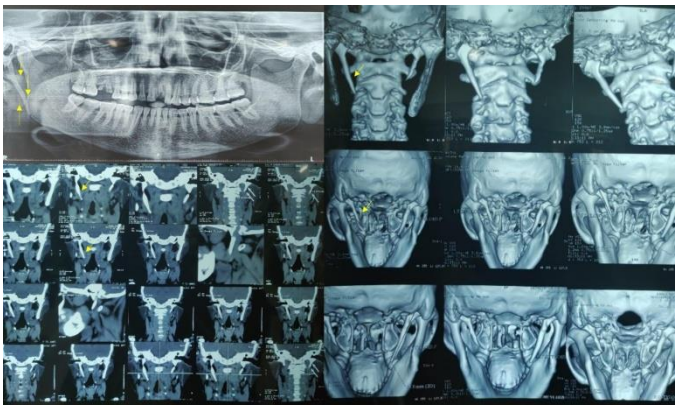

Figure 2: OPG shows elongated styloid process on the left side. CT Coronal section shows elongated styloid process in the left side.

Therapeutic or Surgical Intervention

The patient was counseled regarding the condition and treatment options. A conservative approach was advised initially, including analgesics, anti-inflammatory

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medications, and physiotherapy to alleviate muscle tension. Surgical excision of the elongated styloid process (styloidectomy) was discussed as a definitive treatment option if symptoms persisted.

Follow-Up and Outcome

The patient was kept under periodic review. During follow-up, a reduction in pain episodes was noted with conservative management. Surgical intervention was planned if symptoms reoccurred or worsened [Figure 3].

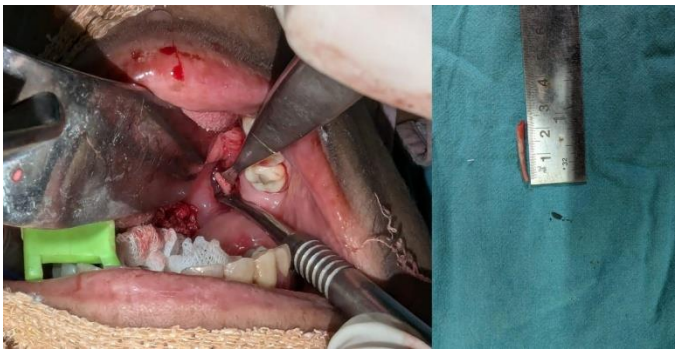

Figure 3: Surgical removal of left styloid process intraorally. Left styloid process measuring 2.4 cm.

Discussion

Eagle's syndrome is related to the presence of an abnormally elongated styloid process with/without aberrant direction and/or ossificated styloid ligament. Cranio-facial pain resembles glossopharyngeal neuralgia and it is secondary to the irritation of the surrounding neurovascular and muscular anatomical structures (carotid artery, cranial nerves and muscles). It has been hypothesized that the pain deriving from the elongated styloid process may be due to compression of the glossopharyngeal nerve as it passes over the superior constrictor muscle.[4,5] The styloid process may also compress the sympathetic nerve fibers, causing Horner syndrome. The differential diagnosis should include glossopharyngeal and trigeminal neuralgia, temporal arteritis, migraine, cluster headache, myofascial pain dysfunction syndrome, pain related to un- erupted third molars, cervical arthritis, tumours and ill-fitting or missing dentures. The condition is more common in women and in patients older than 50 years.[6,7] Mixed, non-specific symptoms, the absence of a clear etiological link and the scant knowledge about this clinical entity often delay diagnosis, as described by our experience. Physical examination and clinical history are useful diagnostic tools. Although plain skull radiographs might be sufficient to reveal the anatomical abnormality, CT of the head/neck and especially 3D-CT scan is considered as the gold standard for visualization of the anatomically complex styloid process, as it avoids the problems of obscured overlapping anatomy.[8,9] Moreover, it underlines the styloid process angulation, which is crucial for the surrounding anatomical relationships. Some controversy exists in the literature as to how many patients with an elongated styloid apophysis, at radiologic examination, do not exhibit any clinical symptoms. However, the surgical approach in patients with a diagnosis of Eagle's syndrome is quite conclusive: surgical styloidectomy has, in fact, a cure rate of 80%.[10]

Conclusion

Eagle's syndrome should always be suspected when idiopathic unilateral pain occurs, especially in adult women and when the pain is not responsive to painkillers. In addition, the exacerbation of the pain by swallowing, yawning and crying, as in our patient, should help in diagnosis. Patients often seek assistance by many clinicians, which is related to the non-specificity of symptoms, with poor success. The elongation of the styloid process is a relatively common condition, although not all the affected patients complain of symptoms.[5,6]

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