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Clinical Case Reports

Eagle's Syndrome: A Diagnostic Dilemma in Chronic Throat and Neck Pain

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Abstract

Summary: Eagle's syndrome is caused by either elongation of the styloid process or calcification of the stylohyoid ligament. It is a rare and important cause of chronic neck, pharyngeal, and cervicofacial pain. Its vague symptoms often simulate neurologic pain and temporomandibular joint disorders, delaying diagnosis. We present a case report of a 21-year-old male with a one-year history of neck and facial pain that was not responding to medication. It was eventually diagnosed on imaging and successfully managed by styloidectomy via trans-oral approach. This case was selected because such cases often remain undiagnosed for many months due to symptoms that cannot be attributed to any routine disorders. This case report highlights the importance of delayed diagnosis and reinforces the need for a detailed history, comprehensive intra-oral examination, and investigations in cases of persistent neck pain.

Keywords: eagle's syndrome, elongated styloid process, stylohyoid.

Introduction

Eagle's syndrome is characterized by an elongated styloid process (>30 mm) or calcification of the stylohyoid ligament.[1] Its classic symptoms comprise recurrent throat pain, dysphagia, foreign-body sensation, and earache.[2] Its presentation mimics glossopharyngeal neuralgia, trigeminal neuralgia, and temporomandibular joint (TMJ) disorders, which frequently result in diagnostic confusion and extending patient's ailment.[3]
CT scan is the diagnostic gold standard modality with orthopantomogram and 3D reconstructions as supplemental tools.[4] Surgical options like styloidectomy are the definitive treatment for symptomatic patients, performed using either trans-oral or extraoral approaches.[5] This report presents a young male with chronic throat pain, initially misdiagnosed as neuralgia, who ultimately was diagnosed as Eagle's syndrome and achieved an excellent outcome following surgical management.[6]

Case Presentation

A 26-year-old male student from Attock presented to the ENT OPD of Holy Family Hospital on October 25, 2024, with a one-year history of pain in the throat radiating to the right side of his face. The pain was intermittent, moderate to severe, and exacerbated by swallowing, opening his mouth, and moving his neck. He also reported a persistent foreign body sensation in the throat. His symptoms were temporarily relieved by over-the-counter analgesics.
Over the previous year, he had consulted multiple physicians, a dentist, and an oral maxillofacial surgeon, receiving treatments for trigeminal neuralgia, glossopharyngeal neuralgia, and dental issues without success. His past medical, surgical, and personal history was unremarkable.
On examination, the patient was vitally stable. Extra-oral examination revealed that the face was symmetrical. No palpable mass or tenderness on the face, neck, or in the muscles of mastication during palpation. No tenderness was elicited in the temporomandibular joints during mandibular movements. Intra-oral examination revealed marked tenderness and a palpable bony lesion in the right tonsillar fossa.

Investigations

Baseline investigations, like CBC, LFTs, RFTs, ESR/CRP, were within normal limits. An orthopantomogram (OPG) was advised, in which the styloid process was elongated. A CT scan of the base of the skull to the clavicle was done to see the length of the styloid process. It was significantly enlarged (35 mm).

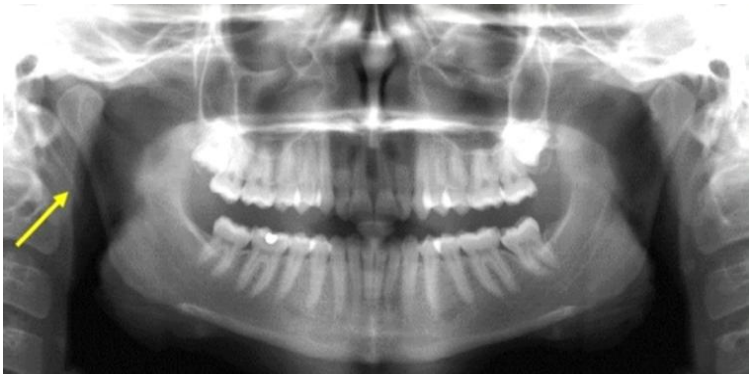

Figure 1: An orthopantomogram (OPG) is done to see the elongated styloid process. An elongated styloid process can be seen in this OPG

Contributions:
AA- Conception, Design
TA AS - Acquisition, Analysis, Interpretation
TA AS - Drafting
AA - Critical Review

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Differential Diagnosis

glossopharyngeal neuralgia, trigeminal neuralgia, temporomandibular joint (TMJ) disorders

Management

After counseling the patient, informed consent was acquired for surgical intervention. The patient underwent styloidectomy via trans-oral approach of the right styloid process under general anesthesia. The elongated portion was carefully amputated and removed with the preservation of the neurovascular bundle. Hemostasis was achieved, and the wound was closed primarily. The patient had an uneventful recovery and was discharged on the third postoperative day with a prescription for oral antibiotics, analgesics, and antiseptic mouthwash.

Outcome And Follow-Up

The patient was followed up at one-week and one-month with complete resolution of pain and foreign-body sensation. The surgical site healed well without any complications.

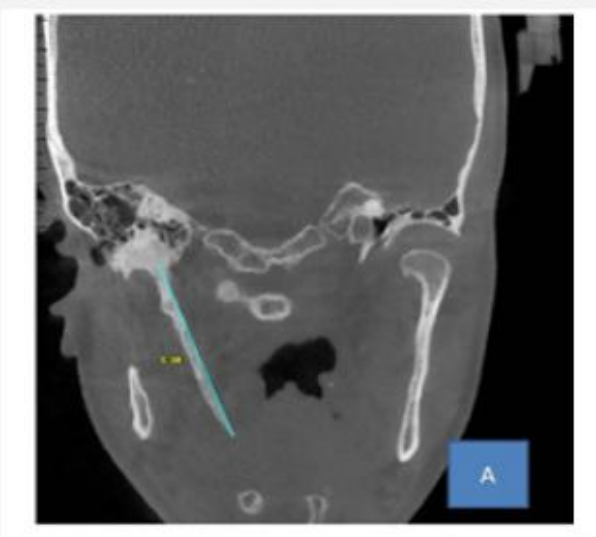

Figure 2: A CT scan of the neck is done to measure the length of the styloid process. This image shows elongation of the right styloid process

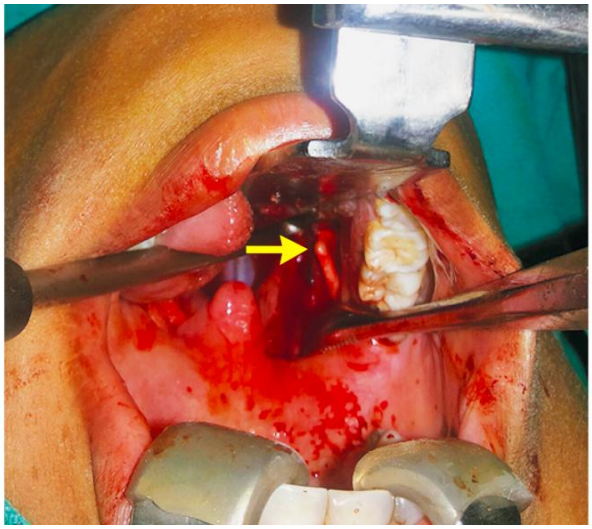

Figure 3: Styloidectomy being done under general anesthesia via transoral approach

Discussion

The diagnosis of Eagle's syndrome has always been a great challenge, as its symptoms correspond with neurological pain and dental pathologies.[7] In our case, the patient underwent multiple assessments and treatments before the definitive diagnosis was discovered. The mainstay of diagnosis is hidden in clinical suspicion and careful palpation of the tonsillar fossa, which may potentially elicit tenderness over a bony prominence.[8] Although an OPG can raise suspicion, a CT scan is the gold standard diagnostic tool, clearly demonstrating the styloid length and its relation to nearby structures.[9] Management options comprise conservative therapy with analgesics and steroids; however, surgical excision, i.e., styloidectomy, constitutes the definitive management for symptomatic patients.[10]

The trans-oral approach, utilized in our case, has the advantages of no external scarring and reduced tissue dissection.[11] While it demands a meticulous surgical approach to avoid neurovascular injury. The excellent outcome in our patient affirms its safety and efficacy.

Eagle's syndrome should be considered in patients with unexplained and refractory throat pain or facial pain.

Careful intra-oral examination of the tonsillar fossa is the cornerstone for early diagnosis. A CT scan is the gold standard investigation, confirming elongation of the styloid process. Trans-oral styloidectomy offers a cosmetically favorable and effective treatment option

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