

CASE REPORT

Eagle's Syndrome: A Case Report

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Abstract: Eagle syndrome, a painful condition in the head and neck region due to elongation of the styloid process or sometimes calcification of the stylohyoid ligament causes recurrent throat pain or foreign body sensation, dysphagia, or facial pain. The symptoms sometimes can be confused with those attributed to a wide variety of facial neuralgias. Eagle's Syndrome can be diagnosed by physical examination and by radiological examination. Treatment is based mainly on surgical therapy in which styloid process or stylohyoid ligament can be shortened through intraoral or extraoral approach.

Key words: Eagle syndrome, styloid process, stylohyoid ligament

Introduction:

First of all, Demanchetis introduced a calcified stylohyoid ligament in 1852. Weinlecher described signs and symptoms related to an elongated styloid process in 1872. In 1930s, Watt W. Eagle of Duke University introduced a syndrome resulting from that an elongated styloid process. In most of the cases, this syndrome came in picture after tonsillectomy. It expressed by a dull, long term pain in the throat; dysphagia, headache and radiating pain in ear¹⁻⁴. The

styloid process is bony structure which is derived

from the Reichert's cartilage – second brachial arch. It arises from petrous part of Temporal bone and runs medially, forward and downward. Ossification of the styloid process and formation of the stylohyoid ligament leads to an increase in the length of the styloid process.

Case Report:

Here presenting a case of 25 year old male patient having complain of dull nagging pain which increased on deglutition since last 15 days. This pain referred to face, eyes and head. On intraoral examination no abnormality was present in oral cavity. The pain was disappeared after injecting local anesthetic solution in tonsillar fossa on right side. Patient did not reveal any contributory past medical history.

On radiological examination, orthopantogram shows calcification of stylohyoid ligament on right side. It appeared longer than 30mm in length. (Figure.1)



OPG showing elongated right styloid process

Conservative management for this patient was advised and regular

follow-up of the patient was done. At present patient has not any symptoms related to previous complain.

Discussion:

Normally, the length of styloid process is from 2-4.77 cm. Most of the times it is less than 3 cm.^{5,6} The exact etiology of elongation of styloid process is not clear. Most accepted theory suggests that the painful symptoms may be related to previous trauma associated with fracture of styloid process or due to previous history of tonsillectomy⁷. Some other theories are, 1) Congenital elongation of styloid process, 2) Ossification of stylohyoid ligament partially or completely, 3) Elongation at cartilaginous junction of Tympanohyale and stylohyoid, which may occurs due to delay in ossification, 4) Reactive hyperplasia after trauma, 5) Associated with early onset of menopause.

According to the Eagle, patients were divided in two groups: 1)

Patients who had classical case of foreign body in the throat along with palpable mass in the tonsillar fossa after removal of tonsil;2) Patients who had complain of pain in neck region following carotid artery distribution like carotid artery syndrome⁸. If the elongated styloid process is present or we can see mineralisation of stylohyoid complex radiographically associated with pain in pharyngeal region does not confirm the diagnosis of eagle's syndrome. For that there are three reasons from different aspects. 1) Sometimes patients with ossified stylohyoid complex are without any symptoms of Eagle's syndrome;2) There does not any interrelation between the length of stylohyoid complex and the severity of pain;3) No any history of tonsillectomy or any other traumatic intervention.⁹

In Eagle's syndrome, patient feels dull and nagging pain due to elongation of styloid process. During deglutition the pain may become worse and can be

reproduced by palpation over the tonsillar fossa.¹⁰ There is no significant sex predilection in the occurrence of mineralisation of styloid process. Usually patients are older than 30 years.^{11, 12}

As like any other syndrome, the diagnosis of the Eagle's syndrome must be reliable on detailed medical history and good physical examination. A styloid process of normal length is usually not palpable. By placing the index finger in the tonsillar fossa and giving gentle to firm pressure, sometimes it may be possible to feel the elongated styloid process¹⁴. If pain is reproduced by palpation and either referred to the ear, face and head the diagnosis of ESP is more likely. By injecting local anesthetic solution in tonsillar fossa, the pain may disappeared and this technique may be used as a diagnostic tool¹⁵.

Sometimes the diagnosis of Eagle's syndrome can be ascertained with various types of imaging which includes panoramic radiograph,

lateral head and neck radiograph, Towne's projection, lateral oblique mandible etc. The lateral views are more helpful in determining the length of the styloid process. The antero-posterior view are also useful to determine whether elongated styloid process is involved bilaterally or not and the presence of lateral deviation. In difficult cases CT scan can be helpful to confirm the diagnosis. Especially 3-D reconstruction becomes much helpful to make exact orientation of the elongated styloid process. The barium swallow test can show the indentation mark of the styloid process as a filling defect.^{11, 16-18}

Classification of styloid process according to pattern of calcification:¹⁹

Type A: Calcified outline

Type B: Partially calcified

Type C: Nodular

Type D: Completely calcified

Classification of styloid process according to type of calcification¹⁹:

Type 1 – An uninterrupted, elongated styloid process.

Type 2 – The styloid process apparently being joined to the stylohyoid ligament by a single pseudoarticulation.

Type 3 – Interrupted segments of the mineralised ligament, creating appearance of multiple pseudoarticulations within the ligament.

Two main treatment modalities for elongated styloid process are conservative therapy or surgical therapy. Conservative management includes transpharyngeal injection of steroids and lignocaine, NSAIDS, Diazepam, Heat application and transpharyngeal manipulation to fracture the styloid process. It should be in mind that this type of blind fracture does not usually relieve symptoms and also increasing chances of damage to nearby neurovascular structures. There are two approaches for

surgical intervention in shortening of styloid process. Extra-oral approach or Intra-oral approach.²⁰⁻²² The main advantage of extra-oral approach is bigger exposure of the surgical field and styloid process. Extra-oral approach also useful in resection of partially ossified stylohyoid ligament. The main advantage of intra-oral approach is resection of styloid process without any facial surgical scar. The disadvantage is the risk of deep cervical infection and neurovascular injuries^{13, 22}.

Conclusion:

This elongated styloid process syndrome can be diagnosed by a good medical history, physical examination and radiological investigations. This syndrome can be mistaken or confused for so many other syndrome or conditions that must be excluded. Conservative management as a treatment modality is preferred. If it fails to improve symptoms than surgical interventions are needed.

The failure of treatment may be associated with the multifactorial origin of Eagle's syndrome or because of the difficulty in recognizing the true cause of the symptoms.

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