TRANSPHARYNGEAL APPROACH FOR EAGLE SYNDROME — CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Symptomatic elongation of styloid process or mineralization of stylohyoid ligament is referred to as Eagle’s syndrome, which usually presents as a vague head and neck pain radiating to jaws, pharyngodynia, difficulty in swallowing, dysphagia, otalgia, and sensation of foreign body in throat leading to wide range of differential diagnosis. Instead of many hypothesis and studies, the exact etiology of styloid process and role of ectopic calcification are unknown. History and physical examination plays a pivotal role in diagnosis and is confirmed by radiological investigation. Treatment modalities include both conservative and surgical management by intraoral and extra oral approaches.

Key Words: Eagle’s syndrome, styloid process, stylohyoid ligament.

INTRODUCTION

Eagle Syndrome is rare clinical entity which presents as a symptomatic manifestation of elongated styloid process of temporal bone and/or ossified stylohyoid ligament complex leading to irritation of adjacent neural and vascular structures.1

The length of normal SP varies between 25mm to 30mm. A styloid process greater than 30mm is considered to be elongated, leading to symptoms like sore throat, dysphagia, otalgia, sensation of foreign body in the throat, hoarseness of voice, pain on rotating head sideways, feeling of stretching in the neck on looking upwards facial pain radiating to the ear or along the mandible and neck.1

It is classified as a rare disease by the office of rare diseases National Institute of Health, USA and is seen in Pakistan otolaryngology set up once in five years.2

CASE REPORT

A 35 years old male presented with the complain of hyper salivation, pain on looking sideways, difficulty in swallowing, stretching in neck on looking upwards, sensation of foreign body in the throat, pain in the neck and throat which increases on swallowing from the last 6 years. Patient had also undergone tonsillectomy 4 years back after which the symptoms aggravated and progressively increased over the period. Patient has also undergone nasal surgery for the removal of nasal polyps. Patient has been under treatment for temporomandibular joint dysfunction with anterior repositioning splint therapy. On examination there was tenderness at right submandibular area along the upper portion of sternocleidomastoid muscle.

On palpation, tonsillar fossa right side was noted to be tender and a bony projection was felt, which was absent on the left side. Based on history and clinical examination, presumptive diagnosis of elongated styloid process was made. Patient was preceded with CBCT which reveals elongated styloid process of right side as show in Fig 1 and segmental ossification of stylohyoid ligament on the left side. Thus final diagnosis of eagle’s syndrome (elongated styloid process type) on right side was made along with segmented type of eagle’s syndrome on left side. Surgical removal of right elongated styloid process was planned, discussed with the patient and was done through trans pharyngeal approach. First of all styloid process was identified intraorally on lateral pharyngeal wall, mucosa overlying styloid process was stretched and incision was made following styloid process, mucosa was reflected muscles were detached and
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styloid process was exposed as shown in Fig 2. Styloid process was removed using bone rounger and incision was stitched. Approximately 1.4 cm of styloid process was removed as shown in Fig 3. Patient was observed and was symptom free on second day post-operatively and on followup after four weeks.

DISCUSSION

Pietro Marchetti, an Italian Surgeon in 1652 was the first who identified the elongated styloid process and attributed it to an ossifying process of Stylohyoid ligament. However, it was Watt Weem Eagle, an American otorhinolaryngology in 1937 described the condition as elongation of styloid process or mineralization of the stylohyoid ligament and relate it to the symptoms complex and coined the term styalgia.

He divided it into two sub types the “classic syndrome” and the “stylocarotid artery syndrome” which was also described in the studies of Breault and Lorman. The classic styloid process syndrome is due to formation of fibrous tissue in tonsillar fossa following tonsillectomy leading to compression of cranial nerve endings in the tonsillar bed and produces symptoms like sensation of foreign body in throat, pain on deglutition, and pain on turning head sideways. The other type “stylocarotid artery syndrome” is due to compression of sympathetic chain in the carotid sheath by the ossified stylohyoid ligament or tip of elongated styloid process resulting in continuous pain radiating in the distribution of carotid artery.

Trauma, inflammations, tonsillectomy, persistence of embryonic tissue and their proliferation and idiopathic elongation are the proposed etiologies so far. The epidemiological incidence of eagle syndrome is variable in literature. Keur JJ reported epidemiological incidence of 1.4-30 % and 3.7% by Ilguy et al. Gokce and colleagues reported 7.7% prevalence of elongated styloid process. Eagle syndrome is more frequent in females. Male to female ratio 1:3 has been noted in a study.

Diagnosis of Eagle’s Syndrome is based on vigilant medical history and physical examination which include previous history of trauma in cervical region, surgeries in oropharynx and neck, palpable styloid Process through tonsillar fossa is suggestive of elongated styloid Process which is not palpable in normal condition. Temporary relief from pain after LA infiltration in tonsillar fossa is highly suspicious for diagnosis of Eagle’s syndrome, but it may not differentiate eagle’s syndrome from other pathological conditions such as glossopharyngeal neuralgia. Conventional radiographs which can be used are panoramic radiograph, PA skull view, lateral cephalogram, lateral oblique mandible view and town’s view. However, conventional radiographs have inherent drawback of super imposition of anatomical structures hence reducing diagnostic information. 3D-CT is a valuable and preferred diagnostic tool which
facilitates in providing accurate information regarding length, angulation and anatomical relationship of styloid process.\textsuperscript{13}

Eagle syndrome can be treated both medically and surgically. NSAIDs, antidepressants and anticonvulsants commonly used for its treatment along with transpharyngeal infiltration of steroids or LA infiltration with no remarkable outcome. Massage therapy, reassurance and alternative medicine approaches have also been proposed by various authors.\textsuperscript{14,15,16} Surgical intervention is the treatment of choice which can be done through both extraoral and intraoral approaches. Advantages of extra-oral approach are better visualization of surgical field and disadvantages are time consuming, scar mark and facial nerve damage. Advantages of transpharyngeal approach are less time consuming, simple and no scarring. Disadvantages include poor visualization, possible iatrogenic neurovascular damage and risk of deep neck space infection.\textsuperscript{17} In this case surgical intervention with transpharyngeal approach was adopted without any post-operative complications.

**CONCLUSION**

It is a rare clinical entity often presented with diversity of symptoms and poses a diagnostic and therapeutic challenge. It usually presents as chronic sore throat and is refractory to traditional therapy. High index of suspicion is required for its timely diagnosis and management, along with the basic knowledge of its patho-physiology and other conditions resulting in such symptoms. It is especially important to those specialties which are routinely involved in the management of orofacial pain.

**REFERENCES**


**CONTRIBUTION BY AUTHORS**

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