



## Eyes Don't See What Mind Doesn't Know- Study of 750 Cases on Eagle's Syndrome.

### KEYWORDS

Eagle's Syndrome, Transoral approach, Stylalgia

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**ABSTRACT** "Stylalgia" is an autonomous entity related to abnormal length of styloid process or to mineralization of the stylohyoid ligament complex. The syndrome is characterized by recurrent throat pain, pharyngeal foreign body sensation, dysphagia, referred otalgia, and neck pain. Aim is to emphasize, on the importance of diagnosis and advantages of intra oral surgical technique essentially preserving the tonsils, where tonsillectomy is not required. 570 Patients undiagnosed for over 5 years were screened and diagnosed on basis of 2 D and 3D imaging to suffer from stylalgia. Patients underwent intra oral surgical procedure for styloid excision and were followed up for 3 months. 3D imaging is ultimate tool for diagnosis, but importance of 2 D images cannot be ruled out. Transoral tonsil preserving excision of styloid is better surgical modality, than tonsillectomy with excision of styloid process.

### Introduction:

Eagle in 1937 first described "Stylalgia" as an autonomous entity related to abnormal length of styloid process or to mineralization of the stylohyoid ligament complex [1]. Elongated styloid process occurs in 4 % of the general population, while only a small percentage of these patients are symptomatic. Normal adult styloid process length is considered to be 2 to 3 cm. The longest recorded elongated styloid process so far that caused symptoms and hence underwent surgery was around 6.5cms, though in an adult human dry skull length up to 8cms has been recorded [2]. The syndrome is characterized by recurrent throat pain, pharyngeal foreign body sensation, dysphagia, referred otalgia, and neck pain. The cause of these symptoms is considered to be elongated styloid process, or ossified stylohyoid or stylomandibular ligament. Since the diagnosis is not easy, the incidence of Eagle's syndrome in the general population may be underestimated [3]. Eagle primarily described 2 syndromes

(1) **Classic styloid syndrome** – it frequently follows tonsillectomy and is characterized by pharyngodynia localized in the tonsillar fossa and sometimes accompanied by dysphagia, odynophagia, hyper-salivation, foreign body sensation and more rarely by temporary voice change.

(2) **The stylo-carotid syndrome** – it is not correlated with tonsillectomy. In this condition the stylohyoid apparatus compress the internal and/or the external carotid arteries and especially their perivascular sympathetic fibers, resulting in a persistent pain irradiating in the carotid.

Pathogenesis is still debated. Surgical trauma or local chronic irritation could cause osteitis and periosteitis of styloid complex with consequent reactive ossifying hyperplasia [1].

### Case Series

Case ranging from 4th to 6th decade of life who reported to the department of Pain management at Your Dentist TM with chief complaint like, globus hystricus, difficulty in swallowing and dull aching pain on upper part of neck and on the lower border of mandible which radiates to lower part

of neck on moving the face towards right side since few years were investigated for presences of elongated styloid process. Among 750 patients reporting to the pain clinic , 45 patients had elongated styloid process on a 2 D image (Figure 1), and were screened for 3 dimensional radiological investigation revealing bilaterally elongated styloid process in 65% of cases approximating the angle of mandible (Figure 2). None of the above cases were having cardiovascular symptoms and patients were not having any other major systemic illness. Patients were administered broad spectrum antibiotics and operative procedure was planned for excision of the styloid process (Figure 3) using transoral tonsil preserving approach. 3cm and 2.5cm of styloid processes were excised in both the cases respectively. Post operative radiograph (Figure 4) was done for academic purpose after 3 days of surgery, patient were discharged on 5th post operative day. Evaluation was done on 21st, 30th and 90th post op day.

### Discussion:

The styloid process and the stylohyoid ligament have been linked to Eagle's syndrome. The symptomatology is characterized by the foreign body sensation in the pharynx, causing difficult and painful swallowing and earache. Pietro Marchetti observed an elongation of the styloid process in the 17th century in 1937. It was Watt W. Eagle who first described stylalgia, later called the Eagle's syndrome.[4] Other names of Eagle's syndrome are Stylalgia, elongated styloid process, long styloid process syndrome, stylohyoid disorder, neuralgia of styloid process, cervicopharyngeal pain syndrome. In the literature it has been referred to as a secondary pathology following traumatic fracture. It can also be the consequence of a difficult endotracheal intubation leading to mineralization of the styloid process and calcification of the ligament complex. A differential diagnosis of Eagle's syndrome should include Trigeminal Neuralgia, Migraine, TMJ disorders, Temporal Rachitis, Unerupted or impacted molar teeth and Faulty dental prostheses. Diagnosis can be made by digital palpation of the styloid process in the tonsillar fossa & can be confirmed by imaging studies.[5] Treatment of symptomatic elongated styloid process includes both medical and surgical therapy. Medical management includes the following analgesics, anti-

convulsants, tricyclic antidepressant, and local infiltration with steroids or long acting local anesthetic agents. Two surgical approaches to styloidectomy are 1) Intraoral approach 2) Extraoral approach. Intraoral approach includes Transpharyngeal tonsillar fossa approach and anterior pillar approach. Main surgical complications associated with styloidectomy are deep space neck infection, injury to main neurovascular structures, haemorrhage, temporary alterations of speech and swallowing, facial nerve injury [6]. The major disadvantage of the external approach is the post-operative cosmetic deformity due to scar formation. Other disadvantages include extensive facial dissection, longer duration of surgery, and uncomfortable paresthesia of cutaneous nerves such as the great auricular nerve [7]. The transoral approach involving resection of the styloid process is relatively easy to perform and leaves no external scar. [8] Prasad et al treated 58 patients with Eagle's syndrome through the transoral approach without any major complications such as infection of the deep neck space or injury of the major vessels or nerves in that area. [9] In our opinion excision of styloid process can easily be performed transorally preserving the tonsils with an apt knowledge of anatomy and surgical experience.

In the above study patients were symptom free for 3 months post operatively and we concluded that, 3-D imaging, is an ultimate tool for diagnosis, but importance of 2 D plain film radiograph cannot be ignored. Eyes don't see what mind doesn't know, patients were undiagnosed for past 5 years. Therefore we concluded that it is imperative to have a through clinical acumen for diagnosing Eagle's syndrome because, though 4 % of population has elongated styloid process but only few of them are symptomatic. Surgical procedure for styloid excision should be conducted from intra oral tonsil preserving approach when tonsillectomy is not required because, tonsillectomy causes larger dead space in the operative site and can accommodate larger post operative hematoma liable of being infected. Since the styloid process & its attachments are in close proximity to major neurovascular of neck and base of skull and can communicate with intracranial structures, avoiding possible causes of infection is of paramount importance. However above study should be continued with larger sample size on multi institutional basis for a deeper and critical evaluation.

#### Figure Legends



Figure 1 Pre Op Orthopentamograph



Figure 2 Excision of styloid

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