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A CLINICAL STUDY OF THE PATIENTS WITH STYLOID NEURALGIA

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ABSTRACT

INTRODUCTION

Eagle syndrome is a rare disorder produced on by the styloid process lengthening or the stylohyoid ligament being calcified. Eagle syndrome patients frequently experience dysphagia, dysphonia, cough, voice changes, otalgia, sore throat, face pain, a feeling of a foreign body, headache, vertigo, and neck pain. When a patient experiences unilateral idiopathic pain, especially in adult women, and the pain is not relieved by analgesics, Eagle's syndrome should always be taken into account. For symptoms that are not identifiable, patients see multiple doctors with varied outcomes.

MATERIAL & METHOD

This study was performed as a retrospective study in Asian institute of medical sciences on 68 patients with elongated styloid process between January 2022 to October 2022 with symptoms of throat pain, otalgia, foreign body sensation in throat and neck pain.In these situations, a multidisciplinary approach and early radiological evaluation, particularly an x-ray of the styloid process, are necessary.

CONCLUSION

This study was conducted to establish a correct diagnosis, determine the underlying reason of the patient's ambiguous symptoms, and evaluate the effectiveness of gabapentin and carbamezapine.

Keywords: Styloid Neuralgia, Styalgia, styloid process

INTRODUCTION

The styloid process is a sharp bony projection which arise from the temporal bone and project antero-inferiorly with a slight medial tilt. Its anatomical boundaries are the stylomastoid foramen posteriorly, the tonsillar fossa anteriorly, the pharyngeal wall medially, internal and external carotid arteries on each side. [1, 2] The mean length of the styloid process varies between 2-3 cm. The styloid processes greater than 3 cm are considered as elongated and may produce symptom such as dysphagia, odynophagia, facial pain, ear pain, headache, tinnitus and trismus which are suggestive of Eagle's syndrome .[2–6] The embryologically styloid process arise from the Reichert's cartilage of the second pharyngeal arch, together with the stylohyoid ligament and the lesser horn of hyoid bone forms an apparatus called stylohyoid apparatus or stylohyoid complex.[7] The prevalence of elongated styloid process or stylohyoid ligament mineralisation in imaging studies has been reported between 19.4% to 52.1% in the general population[8-10] and in up to 76% of patients with temporomandibular disorder. However, the incidence of Eagle syndrome is only 6% in the general population in those who have

elongated styloid process symptoms.[11]. The symptoms are due to the compression of nerves and vessels in the vicinity of the styloid process [2,12]. The diagnosis of this condition is difficult as it is often misdiagnosed due to its vague symptomatology [13]: the symptoms of this syndrome are often confused with other orofacial disease like as tooth disease, temporomandibular disorders, impacted third molars [14]. There are various methods to diagnose like: human dry skull [15], digital panoramic radiographs [16-17] computed tomography (CT)[18] and cone beam computed tomography (CBCT)[19]. Digital panoramic radiographs show an easier interpretation than other methods and thus is a preferred procedure for epidemiological studies and for the first diagnosis. Based on visualization of the styloid process, it has been classified into the following types: normal, elongated (> 25 mm), pseudo articulated and segmented [20-22]. The first line of treatment for Eagle's syndrome is surgical resection of the elongated styloid process. Styloid process resection may also be carried out as a part of surgery for mandibular protrusion [23]. Stylo-tonsillectomy has been proposed as a safe approach with a low complication rate and earlier relief of preoperative symptoms [24]. Paratonsillar approach is another approach which is minimally invasive and a day care procedure with less postoperative complications [25]. In recent advances, the transoral robotic approach has also been tried in treatment of patients with Eagle's syndrome [26]. The purpose of the present study was to establish a correlation between throat and cervicofacial pain with elongated styloid process and to find out the length of styloid process in patients with throat pain.

MATERIALS AND METHODS:

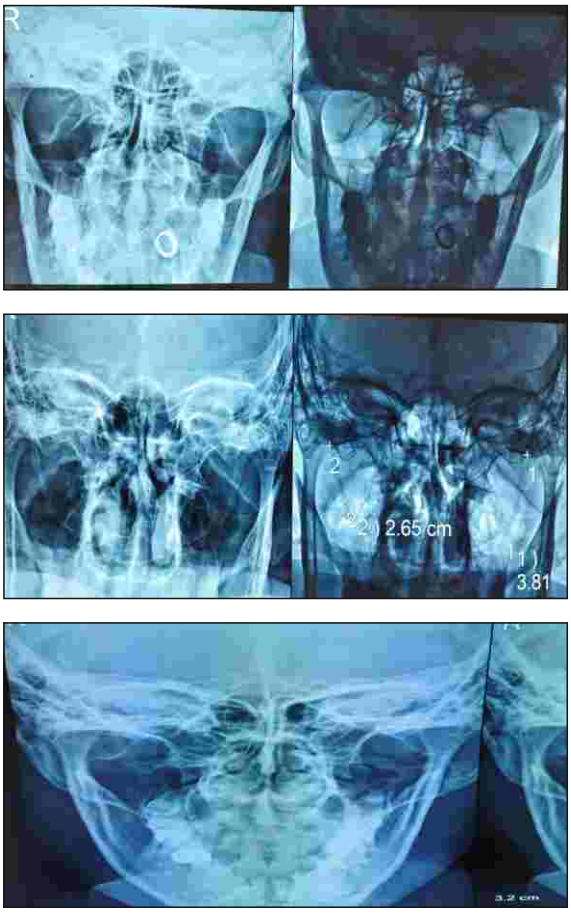
This study was performed as a retrospective study in Asian institute of medical sciences on 68 patients with elongated styloid process between January 2022 to October 2022 with symptoms of throat pain, otalgia, foreign body sensation in throat and neck pain. Out of 68 patients 40 were females and 28 were males with age distribution ranging from 21 years to 77 years.

Inclusion criteria:

1. Patients with throat, cervicofacial pain and otalgia without other oropharyngeal pathology.
2. Clinically and/or radiologically significant elongated styloid process.
3. Calcified stylohyoid ligament.

Exclusion criteria:

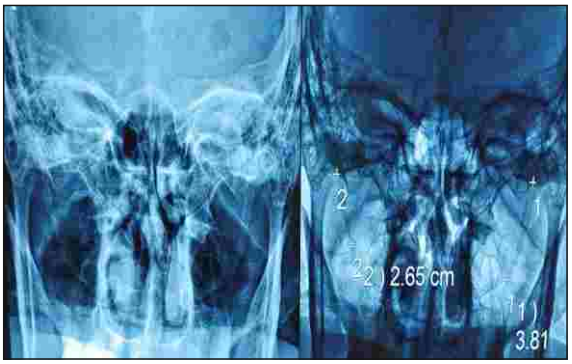
1. Patients with throat pain with pharyngitis, tonsillitis, oro-pharyngeal ulcers and any ear



pathology

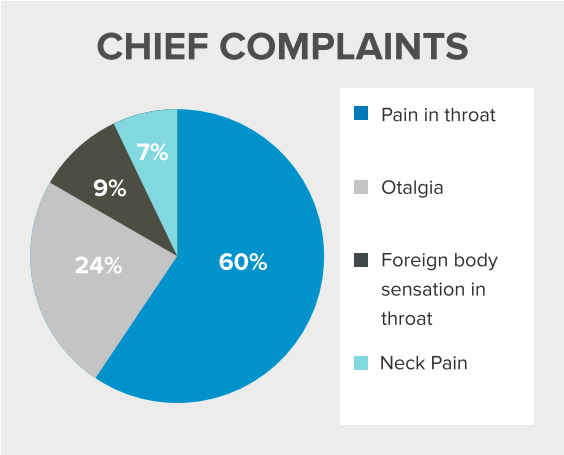
2. Any malignancies
3. Dental pathology

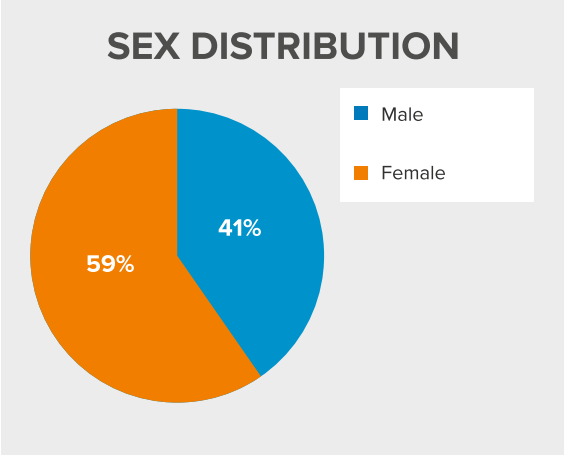
All patients were assessed with McGill's pain questionnaire for their respective symptoms and the response to conservative management. Those patients who did not responded to conservative management underwent intra-oral approach of stylo-tonsillectomy under general anesthesia. Styloid process was assessed clinically by palpation, by assessing the effect of intraoral xylocaine spray and by using Towne view x-ray techniques and were given conservative management.



RESULTS

Out of 68 patients 40 were females and 28 were males. The mean age of presentation was 46 years. Unilateral elongation of styloid process was more common when compared to bilateral with respect to the symptomatic side. Out of 68 patients the most common presentation was pain in throat (50) followed by otalgia (20), foreign body sensation in throat (8), neck pain (6). Thus, the most common presentation was throat related and most of the patients had complex of symptoms suggesting the diagnosis of elongated styloid process. The length and character of styloid process which were symptomatic were studied by Towne's view xray skull base. The maximum length was found to be 7 cm and minimum length which was symptomatic was 3 mm. Among 68 patients 58 were given pregabaline, 5 were given carbamezapine, 2 were given NSAID and 1 others. Most of the patients taking Pregabaline showed improvement in symptoms but 12 patients didn't show any improvement and thus were advised surgical treatment but only one patient underwent surgical intervention.





DISCUSSION

The styloid process is a bony projection, which is situated anterior to the stylomastoid foramen, ranging from 2 to 2.5 cm in length. It projects downwards from the inferior surface of the temporal bone towards the front, downwards and medially narrowing towards the tip. The tip is situated between the internal and external carotid

arteries, laterally from the pharyngeal wall and immediately behind the tonsil fossa [27]. Most of the patients complain of pain in the throat, a foreign body sensation in throat, pain in ear on same side. Clinically, styloid process is palpable occasionally in the tonsillar fossa which is painful on palpation [28]. Normally styloid process is not palpable in tonsillar fossa but if palpable it is suggestive of elongated styloid process. On palpation of the tip of the styloid process it causes exacerbation of existing symptoms [29]. If the styloid process presses on the area of the carotid arteries, the symptoms are more complicated. In case there is pressure over the area of external carotid , the patient will complaint of buzzing in the ears, pain during movement of the head and pain in the anterior neck triangle. In case there is pressure over the area of internal carotid patient will have headache in the area of the orbit and other areas that supply that artery. Sex predilection is insignificant in occurrence of mineralization of the styloid process, however, symptoms are more common in females [30]. In our study of 68 patients 40 female presented with symptoms. The prevalence of styloid process elongation or stylohyoid ligament mineralization in imaging studies has been reported to be between 19.4% to 52.1% in the general population [31] and in up to 76% of patients with temporomandibular disorder[27]. However, the incidence of Eagle syndrome in the general population is underestimated since only 6% of those with an elongated styloid process have symptoms [32].

CONCLUSION

Elongated styloid process can be a cause of craniofacial and cervical pain and its diagnosis may be challenging to many [33].It can be diagnosed by taking detailed history , palpation of the styloid process and radiological (Towne) view. The patients with elongated styloid process and the mean length of the styloid process increase with the age which signify the chronic development of the calcification which is described in literature. In our retrospective study we noticed that majority of patients were adult female and predominantly had unilateral presentation. The majority had pain in throat as a presenting symptom. They were diagnosed on clinical suspicion and with Xray of skull base for styloid process. Majority of patients responded well to conservative management but some of them may require surgical treatment. The role of surgery is controversial and there are conflicting reports in literature. A larger study with varying treatment options may solve the issue. Eagle's syndrome should always be considered when patients are having idiopathic unilateral pain, especially in adult women and when the pain is not responsive to analgesics. Patient consult many clinicians for non-specific symptoms with poor success. Multidisciplinary approach, early radiological investigation, especially x-ray of the styloid process is required in such cases. The elongated styloid process is a relatively a common condition, but not all the patients are symptomatic. Symptoms such as sore throat and neck pain, mild dysphagia and foreign body sensation in throat and ear pain might be misleading towards the diagnosis. The purpose of the study was to sensitize about a common condition like Eagle's syndrome and its good response to conservative treatment. Occasionally it may require surgical management which at present requires greater evidence support.

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