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Case Report

Eagle's syndrome: retromandibular approach as a surgical management

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ABSTRACT

Eagle's syndrome is a pathology characterized by sign and symptoms affecting the pharyngeal and cervical regions, due to enlarged styloid process or calcified stylomandibular or stylohyoid ligaments originating from same. The styloid process is thin, cylindrical and pointed bony structure originating from tympanic part of temporal bone projecting inferiorly and anteriorly at base of skull, which is in close proximity to vital neuro vascular structure of cervical region. The styloid process is considered normal in length in Asian population, when it's dimensions do not exceeds 30 mm. Diagnosis can be made clinically by palpating bony prominence between angle of mandible and mastoid process, and transoral palpation of tip of styloid process. Diagnosis can be confirmed by radiographic investigation, most preferably computed tomography (CT) imaging. Extraoral retromandibular approach of styloidectomy is best and most efficient.

Keywords: Eagle's syndrome, Retromandibular, Styloidectomy, Extraoral approach, Cervical pain, Aesthetic scar

INTRODUCTION

Eagles syndrome or stylohyoid syndrome refers to set of symptoms arising due to elongation of styloid process, which further leads to compression of nearby neurovascular structures, resulting into symptoms like pharyngeal and neck pain, sensation of foreign body in throat, pain while moving head, and dysphagia.[1,2] It often ressembles to symptomatology of head and neck pathologies, as a consequence of which Eagle's syndrome most of time gets misdiagnosed by the clinicians. Along with thorough clinical examination, radiographic analysis is best way to confirm the diagnosis.[3,4] Treatment plan can be further tailored according to severity of symptoms of patient, which can be either conservative or surgical. Surgically stylohoid complex can be approached either intraorally or extraorally.

We present retromandibular approach as a surgical management of Eagle's syndrome.

CASE REPORT

A 44-years male patient reported to department of plastic surgery, with complaint of pain over the right cervical region, specifically behind the right angle of mandible, radiating towards the right side of neck. Pain aggravated during swallowing and talking, and relieved after waking up in morning. And all these symptoms have gradually increased in span of last one year. Patient was on conservative medications for more than 2-3 months, without any significant relief.

Examinations, investigations and treatment

On examination, nothing significant was noted on inspection, bony prominence was palpated between the mastoid and angle of mandible on right side. On intra oral palpation, a pointed bony prominence was felt on right tonsillar bed. Bimanual palpation was done and provisional diagnosis of Eagle's syndrome was made.

Further, the clinical diagnosis was confirmed by 3D CT face and OPG, in which B/L styloid process were enlarged, right (4.5 cm) being enlarged more than left (3.5 cm) (Figures 1 and 2).

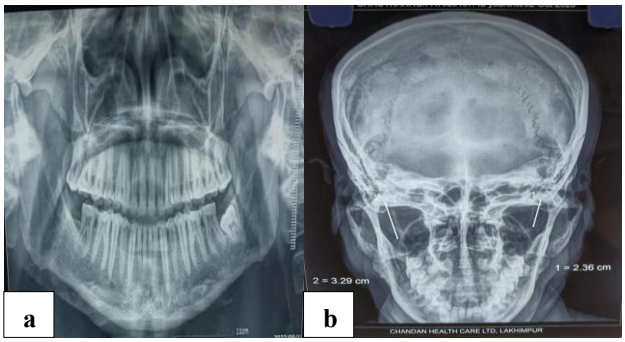

Figure 1: (a) Pre op OPG, and (b) frontal cephalogram.

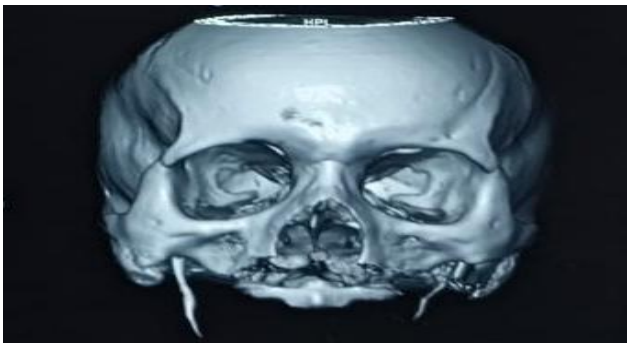

Figure 2: Pre op 3D CT scan of face.

For surgical management, extraoral retromandibular approach was opted. Under general anesthesia, right enaural incision given, extending upto upper one third of anterior border of sternocleidomastoid. Skin, subcutaneous tissue, Platysma incised. Deep cervical fascia visualized and incised and reflected after identifying and securing cervical branch of facial nerve. Further dissection done and angle of mandible freed from surrounding parotid tissue. Enlarged styloid process palpated between angle of mandible and mastoid process. Posterior belly of digastric dissected and reflected laterally and styloid process dissected and visualized, stylomandibular ligament divided from tip of styloid process. 2.9 cm of styloid process excised (Figure 3). Homeostasis achieved, and closure done in layers.

Regular follow up of the patient was done to avoid any surgical site complication (Figure 4).

Patient experienced a significant relief from pain of right cervical region in post-operative period and on follow up visits. Follow up OPG was done to compare it with pre op OPG and significant reduction in size of right styloid process was noticed (Figure 5). And surgical scar was aesthetically much better (Figure 6).

Figure 3: (a) Face lift incision, (b) enlarged styloid process identified, and (c) 2.9 cm of styloid precess excised.

Figure 4: Post op suture line.

Figure 5: Post op OPG.

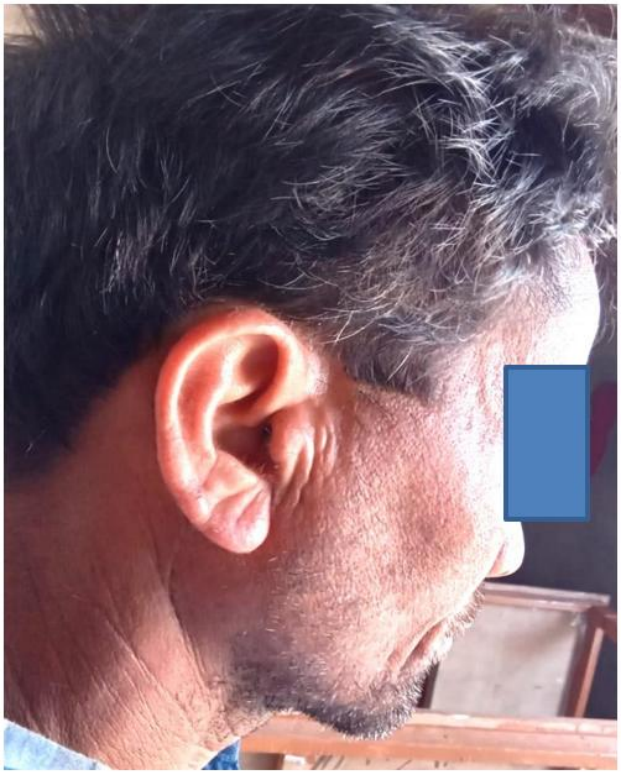

Figure 6: Follow up photograph of scar.

DISCUSSION

Styloid process is thin, cylindrical and pointed structure, which is related to the internal and external carotid arteries, auriculotemporal and facial nerve, stylo-mastoid artery and posterior portion of parotid gland.[5] It serves as insertion of muscles: styloglossus, stylohyoid and stylopharyngus.[1] The mandibular and stylohyoid ligaments originates in PE and inserts in angle of mandible and smaller portion of hyoid bone respectively.[5,6] The SP can measure between 25 to 30 mm within normal limits and considered elongated when exceed this range.

Symptoms majorly include oropharyngeal pain, otalgia, dysphagia, foreign body sensation and trismus. ES has similar symptoms to pharyngeal, otorhinolaryngological, neurological and other pathologies, as differential diagnosis. In some of cases compression of carotid arteries by elongated SP, preventing normal blood flow in the region can lead to stroke. That's why knowledge of normal anatomy and its variations, as well as careful clinical and radiographic examination of stylohyoid complex is very important.

Along with clinical diagnosis, radiographic investigation helps to confirm it. OPG is one of the radiographic option. But CT face with 3D reconstruction is the best and efficient way, because it can also tell about the condition of nearby neurovascular structures.[7] CT angiography is gold standard if there is suspicion regarding carotid artery involvement, mainly when patient has complaint of stroke or dizziness.[8]

The treatment plan depends upon the severity of patient's symptoms. Mild cases can be treated conservatively with medications ie, pharmacologically with NSAIDs and local steroidal injections.[9] But if patient do not get relieved by conservative management or if symptoms are severe, surgical approach of resection of styloid process is preferred. Enlarged styloid process can be resected either intraorally or by external approach. Intraoral approach was not preferred in our case because of major reported complications worldwide i.e., haemorrhage of major vessel which can't be managed intraorally and risk of glossopharyngeal nerve injury.[10-12] Extraoral approach is preferred by surgeons because it provides wider field of vision, helping to save vital neurovascular structures while dissection. Other than that, extraoral approach causes less contamination of surgical field compared to intraoral approach due to flora present in oral cavity. While opting for extraoral approach, concerning points are to do careful dissection to save the marginal mandibular branch of facial nerve and great auricular nerve.[13] Amongst the extraoral approaches, transcervical is mostly practiced as it provides wide exposure. But there remains risk of injury to certain nerves leading to symptoms like dysesthesis at distribution of injured nerves (C2-4), weakness of lip commisure unilaterally (inferior alveolar nerve), and hypertrophic scars, seroma and orocervical fistula formation.[14] We opted for retromandibular approach in this patient which provided void left between the buccal and marginal mandibular branches, avoiding damage to these vital structures. Moreover, the scar due to retromandibular incision was quite inconspicuous and remains hidden in retromandibular shadow.[15,16] More cases are need to be studied further to explore the varied range of advantages and disadvantages of retromandibular approach for styloidectomy in Eagle's syndrome.

CONCLUSION

Retromandibular approach could be opted for styloid resection in Eagle's syndrome for minimal complication and aesthetically better scar. As because it provides excellent exposure of the entire styloid process, allowing complete removal and lower risk of deep neck infection.

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