Management Of Eagle's Syndrome: A Review

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Introduction

The styloid process appears as a narrow and elongated protrusion of the temporal bone, directed caudally, medially, and anteriorly within the maxillo-vertebro-pharyngeal space in which important anatomical structures are located such as both carotid arteries, the internal jugular vein, the facial, glossopharyngeal, vagus, and hypoglossal nerves.[1] The normal length of the styloid process ranges from 1.52 to 4.77 cm; most are less than 3 cm.[1] Eagle syndrome is considered a rare disease. The pain associated with certain Temporomandibular disorders (TMD), atypical myofascial pain, and even pain of dental origin may all mask the true underlying diagnosis of Eagle's syndrome.[1]

The basic symptoms are recurrent neck, throat, and hemifacial pain; sensation of foreign body in the throat; dysphagia; change in voice; otalgia; and pain that radiates to the upper extremities.[2] Management of this syndrome, however, can be troublesome. Treatment usually involves medical approach (administration of non-steroidal anti-inflammatory medications or even carbamazepine) or surgical interventions. The main treatment approach is partial excision of the styloid process.[2]

Surgical Technique

Surgical technique under general anesthesia, after tonsillectomy, the tonsillar bed is palpated and the tip of the styloid process is identified.[1] With a curved artery forceps, the muscles of the tonsillar bed is dissected, separated, and retracted downward between the two arms of the curved artery forceps. An incision is made on the periosteum at the tip of the styloid process.[1] Then, the periosteum is stripped from the tip to the base. While doing this, the muscles are constantly retracted with the curved artery forceps, which allow visualization of the entire length of the styloid process. The styloid process is excised with a bone nibbling rongeur.[1] The grip on the fractured styloid process must be firm; the styloid process can be accidentally fractured before it is completely **dissected. The fractured piece can then pull down into the** tonsillar bed by the muscles attached to it, which might led to search for the broken piece.[1] The external approach to styloid process is performed under general anaesthesia with patient lying in supine position with head rotated away from surgeon.[3] A skin incision is made several centimeters below ramus of mandible crossing sternocleidomastoid muscle.[3] The deep cervical fasica is incised and anterior border of sternomastoid revealed.[3] The stylohyoid muscle and posterior belly of digastric is identified overlying the carotid arteries.[3] The styloid process is exposed by retracting the muscle posterioinferiorly and the mandible anteriorly carefully dissecting in the periosteal plane to the base of the skull. The process can be shortened using bone nibbling process.[3]

Discussion

The styloid process is long slender and pointed bony process projecting downwards and forwards and slightly medially from temporal bone.It desecends between the external and internal carotid arteries to reach the side of pharynx.It is interposed between parotid gland lateraly and internal jugular vein medially.[4]

Eagle syndrome is the name given to developmental disorder in which styloid process is very long and to the acquired disorder in which stylohyoid ligament has calcified.[5]

Elongated styloid process also known as eagle syndrome has been characterised as severe unilateral pain radiating from ear to neck. A radiograph that shows an elongated styloid process in a symptomatic patient confirms the diagnosis.[6]

Diagnosis can usually be made on physical examination by digital palpation of the styloid process in the tonsillar fossa.[7] Three-dimensional computed tomography can utilized for supporting diagnosis. The treatment of Eagle's syndrome is primarily surgical.[7]

The external approach provides adequate anatomic exposure of both the styloid process and nearby structures. The exposure will be important in the presence of vascular injury with intensive bleeding. In addition,

this sterile surgical technique decreases the risk of bacterial contamination. The major disadvantage of the external approach is the postoperative cosmetic deformity due to scar formation. The other disadvantages are the necessity of general anesthesia

and extensive fascial dissection, longer duration of surgery ,and uncomfortable paresthesias of cutaneous nerves.[1]

Transoral/intraoral resection of the styloid process is relatively easy to perform, less time consuming, and avoids external scar as well as extensive fascial dissection. This technique could also be performed under local anesthesia. Both operation and recovery times of this procedure are short.[1] There would be moderate pain and trismus in the first week and mild dysphagia for 2 weeks. It was considered that these short postoperative complications should be normal considering that the intraoral approach may causes temporary edema at the operative site, submandibular and retromandibular regions.[1]

Conclusion

The misdiagnosed patients with Eagle's syndrome may undergo unnecessary treatments. So it is important to make a correct diagnosis first. The diagnosis of Eagle's syndrome is best made with a successful local anesthetic injection, but it is confirmed when cessation of all symptoms occurs after surgical intervention. Computed tomography scan is best for diagnosis, although also an accurate case history and the specialist's intuition are fundamentally important for the differential diagnosis regarding several other pharyngocranio-facial pain disorders.

Surgical treatment is the first choice and the intraoral/transoral approach is a safe surgical alternative achieving adequate treatment of Eagle's syndrome and must be made only if the surgeon is familiar with the technique and the handling of its possible detrimental complications. It should be used only if the distal tip of the styloid process can be palpated in the tonsillar fossa. It is not recommended the bilateral intervention at the same surgery, because of possible great discomfort at postoperative time.

References

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