Endoscopic Assisted Styloidectomy - Indigenous Approach

Manish Munjal^{1*}, Japneet Kaur², Porshia Rishi³, Venus N. Tilavat⁴, Shubham Munjal⁵ and Arush Singla⁵

¹Professor and Head, Department of Otorhinolaryngology, Dayanand Medical College and Hospital, Ludhiana, Punjab, India; manishmunjaldr@yahoo.com ²ENT Consultant, Amcare Hospital, Zirakpur, Punjab, India ³Junior Resident, Department of Otorhinolaryngology, Dayanand Medical College and Hospital, Ludhiana, Punjab, India ⁴Consultant, Department of Otorhinolaryngology, Elite Health Care Hospital, Surat, Gujarat, India ⁵Medical Student, Dayanand Medical College and Hospital, Ludhiana, Punjab, India

Abstract

An individual with vague pain in the upper neck, after being treated with multitude of therapies, allopathy and alternative medicine, most likely is a victim of the "Eagle's syndrome". An endoscopic assisted surgical intervention provides relief and solace to many.

Keywords: Eagle's Syndrome, Endoscopic Approach, Ring Curette

1. Introduction

The styloid process, the stylohyoid ligament and its site insertion, the lesser cornua of the hyoid, embryologically are derived from the Reichert's cartilage of the second pharyngeal arch. Stylalgia or Eagle's syndrome manifests as a vague pain in the upper lateral neck with a radiographic finding of an elongated styloid process or calcified stylohyoid ligament. The styloid process is juxtaposed between the mastoid process and the tympanic plate of the temporal bone with the neurovascular compartment lying medial to it in its upper part. The internal jugular vein, XI, X, IX lower cranial nerves and the internal carotid artery in that order from posterior to anterior are components of the neurovascular bundle. Medial to the styloid tip is the superior constrictor covered by the pharyngobasilar fascia. Medial to the superior constrictor is the tonsillar fossa, the bed of the tonsil. The external carotid lies lateral to the styloid tip and superiorly divides into the ascending superficial temporal and the medially traversing internal maxillary. The styloid process extending beyond its length of 2-2.5 cm and if more than 3cm, is labelled aptly, the "elongated styloid" or the Eagle's syndrome.

Eagle's syndrome maybe asymptomatic or may manifest with local compressive symptoms namely painful cervical movements, vague pharyngeal discomfort, dysphonia, painful tongue movements, profuse salivation, headache and otalgia¹. These maybe isolated or may occur in combination.

2. Case Report

A 40 year lady presented in the head neck clinic with vague complain of dull ache on the left side of her upper neck. The pain was in the vicinity of the lesser cornua of the hyoid bone and had not receded with topical application of analgesics, muscle relaxants, nerve stabilisers and injectable steroids given over the period of three years. Index finger digital palpation elicited mild external tenderness over the hyoid and at the inferior pole of the tonsil.

Orthopantomogram (Figure 1 a,b) suggested a calcified stylohyoid which was confirmed on computed tomography (Figure 2 a,b). Though the left styloid was elongated too but was asymptomatic, only the right side was consented to, for surgical intervention.



Figure 1a. Orthopantomogram (OPG) elongated left styloid process.



Figure 1b. OPG elongated right styloid process.



Figure 2a. CT scan showing elongated styloid processes either side.



Figure 2b. CT scan showing elongated styloid processes either side (lateral view).

3. Technique

She was taken up for endoscopic assisted styloidectomy under general anaesthesia. The left tonsillar fauces were made prominent by hyperextension of the neck and Boyle Davis mouth gag was inserted.

Unilateral palatal tongue retraction was given.

A bimucosal flap tonsillectomy was performed and haemostasis obtained.

The tonsillar bed was palpated to discern the styloid process. Care was taken to delineate the tip of the styloid at the inferior pole, with the pulp of the index finger.

The yellowish tinge of the styloid beneath the stretched superior constrictor was identified (Figure 3).



Figure 3. Endoscopic visualised tonsillectomy performed to exposed tonsil bed.

A bipolar diathermy skeletonization of the distal third of the styloid was initiated (Figure 4), which was followed by a proximal exposure using the razor sharp inner edge of the "ring curette" borrowed from endoscopic sinus surgery instrument set (Figure 5).

The ring of the instrument on medial retraction at the base, brought forth the styloid tip in the "safe" zone of tonsillar fossa (Figure 6,7) away from the posteriorly placed "neurovascular" compartment of the parapharyngeal space.

A Surgical Kocher's forceps snipped the styloid at the base, (Figure 8) under high resolution visualisation on the medical grade monitor.

Zero and 45 degree angled scopes assisted in precise dissection and resection with perfect haemostasis.

Isotonic saline irrigation provided a clear field.



Figure 4. Palpation of styloid process in tonsil bed.



Figure 5. Bipolar diathermied overlying superior constrictor.



Figure 6. Distal skeletonised styloid.



Figure 7. Entire skeletonised styloid with ring curette at base.



Figure 8. Resected styloid. Artery lifting cut styloid and stump straddled with ring curettes.

4. Discussion

Therapeutics in Eagle's syndrome are threefold, surgical and non surgical and the nerve blocks. The former embarked upon if the latter two are unsuccessful. Reassurance of there being no underlying malignancy is vital. Steroidal and non steroidal anti-inflammatory oral medications, followed by carbamazepine or gabapentin are prescribed as the first line of treatment^{2,3}. Injectable steroids (Triamcinolone acetonide) or local anaesthetics (1% xylocaine)⁴ nerve block externally at the lesser cornua of the hyoid or internally at the inferior part of the tonsillar fossa .The effectiveness of the latter varies in individuals^{2,3}.

The surgical modalities undertaken are the extra oral transcervical approach with extensive dissection in, proximity to vital neurovascular structures with hence more morbidity. Moreover the surgical time is more⁵. The intra oral approach conventionally is the transoral-transpharyngeal access to the styloid and a manual fracture of the same⁶. The procedure with experience can be undertaken as an office procedure under local anaesthesia⁷. Our indigenous endoscopic approach, utilises, magnified visualisation and meticulous dissection of the styloid process in the tonsillar bed on a high resolution monitor with no lateral damage to vital structures. Moreover the procedure is minus an external scar. imaging exhibiting an elongated styloid are the features suggestive of the syndrome of Eagle. The surgical resection of the elongated hyoid is one of the therapeutic modality.

Endoscope guided bimucosal flap technique is a novel way of dissecting the elongated styloid process. This technique produces no external scarring and is not associated with any serious complications

6. References

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5. Conclusion

Symptomatology of vague upper lateral neck uneasiness, localised tenderness on the lesser cornua of the hyoid, and

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