University Journal of Surgery and Surgical Specialities

ISSN 2455-2860 2019, Vol. 5(2)

ENDOSCOPIC TRANS ORAL ODONTOIDECTOMY - A CASE REPORT

RONALD ANTO P
Department of OTO-RHINO-LARYNGOLOGY,MADRAS MEDICAL COLLEGE AND GOVERNMENT GENERAL HOSPITAL

Abstract : The cranioverterbral junction is a collective term that refers to the occiput, atlas, axis and supporting ligaments. A 16 year old presented with difficulty in moving both upper and lower limbs since 2013. Patient was diagnosed as Craniovertebral junction anomaly and underwent Occipito Cervical fusion. He improved after surgery, but being an active boy in growth spurt, he detoriated again and presented with progressive weakness of all four limbs and respiratory difficulty and bladder disturbance since three months. On examination Power in right upper and lower limb was 3 in 5 and Power in left upper and lower limb was 2 in 5. CT scan of cervical spine showed Odontoid process seen compressing the spinal cord.Endoscopic trans oral odontoidectomy was performed under general. Odontoid process was found to be compressing the spinal cord and was reduced with burr and suction apparatus. Post operatively the power in both upper and lower limbs was 4 in 5 with no respiratory and bladder disturbances. Patient post operatively had no complications and he is been on regular follow up without any recurrences.

Keyword : Odontoid process, Endoscopic trans oral odontoidectomy, Craniovertebral junction, Posterior pharyngeal wall

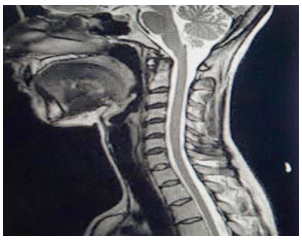
INTRODUCTION

The cranioverterberal junction accounts for approximately 25% of the vertical height of the entire cervical spine. The axis serves as a transitional vertebrae between the cervical spine proper and the craniovertervral region. A unique feature of the axis the odontoid process or dens located on its superior aspect.Congenital abnormalities of odontoid are common in patients of Down syndrome, Klippel-feil syndrome, Morquio syndrome and Spondyloepiphyseal dysplasia. Aplasia, hypoplasia and Os odontoideum (odontoid is sepererated from the axis vertebra by a transverse gap) are the common abnormalities. This article reports a case of as Craniovertebral junction anomaly for which transoral endoscopic odontoidectomy was performed.

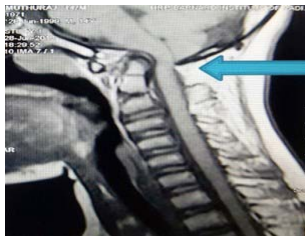
CASE REPORT

A 16 year old boy from tiruvannamalai presented with difficulty in moving both upper and lower limbs since 2013.Patient was diagnosed as Craniovertebral junction anomaly and underwent Occipito Cervical fusion.He improved after surgery, but being an active boy in growth spurt, he detoriated again and presented with progressive weakness of all four limbs and respiratory difficulty and bladder disturbance since three months.On examination Power in right upper and lower limb was 3/5 and Power in left upper and lower limb was 2/5.

CT scan of cervical spine showed Odontoid process seen compressing the spinal cord

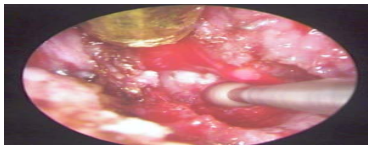


Normal axis vertebrae



Patients odontoid compressing the spinal cord

Endoscopic trans oral odontoidectomy was performed under general anaesthesia with head extension position with Boyles Davis mouth gag. Vertical incision made in posterior pharyngeal wall. Incision was made deeper with complete haemostasis with cautery. Odontoid process was found to be compressing the spinal cord and was reduced with burr and suction apparatus. Dural pulsations were noted and incision was closed using sutures. Post operatively the power in both upper and lower limbs was 4/5. Patient post operatively had no complications and he is been on regular follow up without any recurrences.



Intra-operative picture showing odontoid process drilled using burr.

DISCUSSION:

The axis serves as a transitional vertebrae between the cervical spine proper and the Craniovertebral region. A unique feature of the axis the odontoid process or dens located on its superior aspect. The dens extends superiorly from the body to just above the C1 vertebrae before tapering to a blunt point. The anterior aspect of the dens has a hyaline cartilage covered midline facet for articulation with the anterior tubercle of the atlas. The posterior aspect of the dens is usually marked with a groove where the transverse ligament passes. Atlanto axial joint is a relatively complex articulation. In the absence of an intervertebral disc in this region the supporting soft tissues of the joint of the upper cervical spine must be lax to permit motion while simultaneously being able to withstand great mechanical stresses. Approached to odontiodectomy includes anterior and posterior approach. In this case we have performed endoscopic transoral anterior approach. Study by Qiuhang Z in 2013 shows that endoscopic transoral approach may be a more direct route to C1 and the odontoid than the endoscopic endonasal approach. This approach allows complete resection odontoid to decompress the cervicomedullary junction without increasing the risk of complications such as wound infection, meningitis, and velopharyngeal insufficiency. Usually, the occipitocervical posterior fusion and tracheotomy is less necessary in this approach. Study by Morales-Valero SF in 2015 shows endonasal endoscopic approach is effective for the treatment of neural compression caused by CVJ pathology. It offers advantages such as lower rates of postoperative dysphagia and respiratory complications when compared with the more traditional transoral approach. However, these 2 approaches should be seen as complementary rather than alternatives.

CONCLUSION

Craniovertebral junction anomalies are most commonly congenital type. Advantages of endoscopic trans oral approach is that palatal splitting is avoided. In standard transoral approaches with microscope the hard palate obstructs visualization of upper extent of the compressive lesion. By using endoscope it was easy to overcome this obstacle with ease as it could be navigated to look around the palate. Thus Endoscopic trans oral odontoidectomy was performed.

REFERENCES

1. Transoral endoscopic odontoidectomy to decompress the cervicomedullary junction. Qiuhang Z1, Feng K, Bo Y, Hongchuan G, Mingchu L, Ge C, Feng L. ncbi.nlm.nih.gov/pubmed/23558440

2. Evolution of transoral approaches, endoscopic endonasal approaches, and reduction strategies for treatment of craniovertebral junction pathology: a treatment algorithm update. Dlouhy BJ1, Dahdaleh NS, Menezes AH. http://www.ncbi.nlm.nih.gov/pubmed/25828502

3. Endoscopic endonasal approach for craniovertebral junction pathology: a review of the literature. Morales-Valero SF1, Serchi E, Zoli M, Mazzatenta D, Van Gompel JJ. http://www.ncbi.nlm.nih.gov/pubmed/25828491

4. Endoscopic endonasal odontoidectomy with anterior C1 arch preservation in elderly patients affected by rheumatoid arthritis. Iacoangeli M1, Gladi M, Alvaro L, Di Rienzo A, Specchia N, Scerrati M. http://www.ncbi.nlm.nih.gov/pubmed/23453575

5. Endoscopic image-guided transoral approach to the craniovertebral junction: an anatomic study comparing surgical exposure and surgical freedom obtained with the endoscope and the operating microscope. Pillai P1, Baig MN, Karas CS, Ammirati M. http://www.ncbi.nlm.nih.gov/pubmed/19404122

6. Transoral approaches to the cervical spine. Hsu W1, Wolinsky JP, Gokaslan ZL, Sciubba DM. http://www.ncbi.nlm.nih.gov/pubmed/20173513

7. Extended transoral approaches: surgical technique and analysis. Youssef AS1, Sloan AE. http://www.ncbi.nlm.nih.gov/pubmed/20173514.

An Initiative of The Tamil Nadu Dr. M.G.R. Medical University
University Journal of Surgery and Surgical Specialities

An Initiative of The Tamil Nadu Dr. M.G.R. Medical University
University Journal of Surgery and Surgical Specialities