INTRODUCTION

Juvenile nasopharyngeal angiofibroma (JNA) is a rare, benign tumor almost exclusively affecting adolescent and young males. Although it accounts for a mere 0.05 to 0.5% of all head and neck tumors, its propensity for massive bleeding and progression or recurrence until puberty is often challenging.

JNA are vascular tumors and the mainstay of treatment is surgery. JNA have been classified in various stages by Fisch et al., Radkowski et al., depending on the extent of lesion and its intracranial extensions. Surgical planning of these tumors depends on the extent of lesion and surgical expertise of the surgeon.

In recent years more and more JNA being treated by Endonasal Endoscopic approach which is minimal invasive and magnification during surgery is very helpful in complete tumor removal leading to lesser reoccurrence.

Trans-arterial Embolization is used in most of Centers around world for decreasing Vascular supply for JNA by embolizing feeding Branches of External Carotid artery. Larger tumors Stage 3 or beyond have feeders from both External and Internal Carotid artery of same side or ICA from opposite side of tumor.

In this poster, we are highlighting the Blood supply of Tumors in different stages of JNA and its implications in decision making for Endoscopic V/S Endoscope Assisted mid face debulking approach or other open approaches.

Tumors having major feeders from Internal Carotid artery should be dealt with utmost care in endoscopic Surgery of JNA to avoid torrential bleeding, endoscope assisted open approaches are well suited to handle these tumors.

METHODS AND MATERIALS

This is a Retrospective study conducted on 41 consecutive patients of different stages of Juvenile Nasopharyngeal Angiofibroma operated at Tertiary care Institute from Jan 2013 to September 2015. The surgery was either done by Endoscopic Approach or Endoscope assisted midface debulking approach. Majority of patients underwent trans-arterial embolization (Except Grade I patient).


RESULTS

All Cases were Male, age range from 9 to 22 years.
Stage 1(n- 4) cases due to predictable blood supply were not embolized and removed endoscopically.
Stage 2(n-9) tumors were emobilized and 2 has feeders from ICA,1 recurrent case from petrous ICA and 1 primary case has supply from vidian artery.
Stage 3 (n-28) tumors were emobilized and anaglographic pattern was studied in details along with intraoperative blood loss.

5 cases were treated endoscopically while remaining 23 underwent endoscope assisted mid face debulking approach. 15 Patients had some supply from opposite ECA and a source of bleeding if not emobilized.

Blood loss and time duration was more in endoscopic cases and more so with any feeders from ICA.

Blood loss from endoscope assisted midface debulking was comparatively less as compared to Endoscopic approach due to lesser intra-operative time.

Most of Stage 3 has ICA supply and in these cases blood loss and operative time increased.

1 patient of stage 3 B has a small residual lesion in the lateral wall of cavernous sinus due to torrential bleed from feeder of Cavernous ICA which was controlled with Muscle patch and that patient was reoperated later at another centre and is tumor free now.

DISCUSSION

JNA has traditionally been operated by various open approaches in past, with the advancement in endoscopic surgery in last decades, more and more JNAs are being operated via endoscope.2

Endoscopic surgery is planned based on extent of lesion only but these highly vascular tumors are supplied by branches of ECA and ICA on both ipsilateral and contralateral side.1

Study of anaglographic pattern at time of embolization will give an exact blood supply of these tumors. Feeders from ECA can be emobilized easily and are easy to control during surgery. ICA feeders to these tumors are not emobilized due to fear of migration of embolic material to ICA, handling of these ICA feeders is difficult in endoscopic surgery and at times leads to torrential bleeding.

The feeders from Ipsilateral ICA and contralateral ECA are always to be kept in mind, this is very important in decision making for the Endoscopic V/S Open surgical resection of JNAs.

Endoscope assisted open approaches (Midface) is a good midway as the operative access to tumor is quite large and using Endoscope at critical areas give enough magnification to look in all involved area including various foramina.

CONCLUSIONS

Surgical approach are mainly decided by the Fisch Stage of Tumor without any consideration of vascularity of these tumors. This approach is useful in smaller tumors (grade 1) which have predictable blood supply, but in bigger tumors (grade 2) the vessels supplying tumor are unpredictable and quite a few them have feeders from both External and Internal Carotid artery. We propose that vascularity should be considered while planning surgical approach, blood loss is also dependent on the blood supply of tumor.

Tumors up to stage Fisch Stage 3A having Blood Supply only from External Carotid artery are better suited for Endoscopic Approach while tumor with Stage 3A and beyond with Internal Carotid Artery feeders are better suited for Endoscope assisted Mid Face Approach.

REFERENCES

5. COPC - http://www.copc.org