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Original Article

Juvenile Nasopharyngeal Angiofibroma - A Hospital- Based Retrospective Study

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Abstract

Introduction: Juvenile nasopharyngeal angiofibroma is a highly vascular histologically benign, locally aggressive neoplasm of the nasopharynx. It accounts for 0.05% of all head and neck neoplasm with a high incidence of persistence and recurrence.

Materials and Methods: A retrospective hospital-based study was conducted in Government Theni Medical College on cases of juvenile nasopharyngeal angiofibroma for 4 years duration in the period from 2013 to 2016. A total of 4 cases of Juvenile nasopharyngeal angiofibroma were included in this study.

Observation and Results: Among four cases, three cases were presented in Stage 1. One patient presented with infratemporal fossa involvement (Stage 3). Nasal obstruction and epistaxis were the most common presentation seen in all cases. All patients underwent intranasal endoscopic removal of JNA under general anesthesia. For one patient right external carotid artery ligation was done to reduce intraoperative bleeding and elective tracheostomy to maintain the airway.

Conclusion: The study previously done in various parts of the world have shown that JNA is very rare and its incidence is 0.05%. Contrast, in this study in this institution, shows the incidence was 0.02%.

Key words: Epistaxis, Juvenile angiofibroma, Nasal obstruction, Nasopharyngeal angiofibroma

INTRODUCTION

JNA is a vascular benign but locally aggressive tumor of the nasopharynx that affects male adolescents with an average age of onset being 14 years. It accounts for 0.05% of all head and neck neoplasms.[1]

Anatomically, the point of origin is believed to the posterolateral wall of the roof of nose, where sphenoid of palatine bone meets the horizontal ala of the vomer and root of pterygoid process of sphenoid. The large tumors present as bilobed dumbbell swelling straddling the sphenopalatine foramen with one component filling the nasopharynx and the other extending into the pterygopalatine and infratemporal fossa.[2] The central stalk joining the two portion occupies the sphenopalatine foramen at the upper end of the vertical plate of palatine bone without appearing to enlarge it very much.[3]

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Aim and Objectives

- To evaluate the incidence of JNA in this institution.
- To evaluate the role of pre-operative contrast-enhanced computed tomography (CECT) and MRI in the diagnosis of JNA.
- To evaluate the role of intranasal endoscopy in JNA cases.

MATERIALS AND METHODS

A retrospective hospital based study was conducted in Government Theni Medical College Hospital on patients of JNA. A total of 4 cases included in this study.

All the patients were staged according to Fisch classification [Table 1].[1,4-6]

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Observation and result

This study was conducted in the Department of ENT in Government Medical College. The study was conducted as retrospectively account of JNA cases reported to our hospital. The extreme of ages at presentation is shown in Table 2 and Figure 1.

Among four cases, three cases were presented in Stage 1. One patient presented with infratemporal fossa involvement (Stage 3).

Nasal obstruction and epistaxis were the most common presentation of angiofibroma seen in all cases. Other common symptoms and signs are a diminished vision, proptosis, facial swelling and protruding nasal mass [Table 3].

CECT scan was the most common imaging modality used for diagnosis and staging of JNA which was done in three cases. CECT and MRI were done in one case to identify extension of the tumor mass.[12]

All patients underwent intranasal endoscopic removal[10] of JNA under general anesthesia. For one patient, right external carotid artery ligation[7] was done to reduce intraoperative bleeding and elective tracheostomy to maintain the airway.

All the patients had undergone diagnostic nasal endoscopy postoperatively every 6 months intervals.

DISCUSSION AND CONCLUSION

In this study, a total of 4 cases were studied and following inferences and conclusion are drawn.

The reported incidence ranges from 1 in 5000 to 1 in 50,000 of all otolaryngological patients in different countries. The study previously done in various parts of the world have shown that JNA is very rare and its incidence is 0.05%.

Contrast, in this study in this institution, shows the incidence was 0.02%.

In recent times, there has been a major change in the epidemiology, pathogenesis, diagnosis, medical management, pre-operative care, and surgical management of JNA.

- Angiofibroma is essentially disease of adolescent male, and peak age of presentation is 16 years.

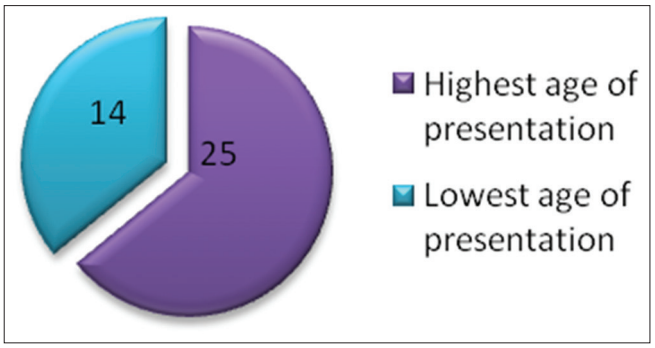

Figure 1: Presentation of age (years)

Table 1: Fisch staging system

Stage 1	Tumor limited to the nasopharyngeal cavity, bone destruction negligible (or) limited to sphenopalatine foramen
Stage 2	Tumor invading the pterygopalatine fossa (or) the maxillary, ethmoid (or) sphenoid sinus with bone destruction
Stage 3	Tumor invading the infratemporal fossa (or) orbital region a.Without intracranial involvement b. With intracranial extradural with parasellar involvement
Stage 4	Intracranial intradural tumor a.Without infiltration of the cavernous sinus, pituitary fossa or optic chiasma b.With infiltration of the cavernous sinus, pituitary fossa or optic chiasma

Table 2: Age extremes of presentation

Presentation	Age (years)
Highest age of presentation	25
Lowest age of presentation	14

Table 3: Symptomology of JNA

Symptoms and signs	Present (%)	Absent (%)
Nasal obstruction	100	0
Epistaxis	75	25
Facial swelling	0	100
Proptosis	0	100
Protruding nasal mass	25	75

Table 4: Imaging modalities required for diagnosis and staging of JNA

Imaging modality	Number of patients (%)
CT scan	4 (100)
CT + MRI	1 (25)

CT: Computed tomography, MRI: Magnetic resonance imaging

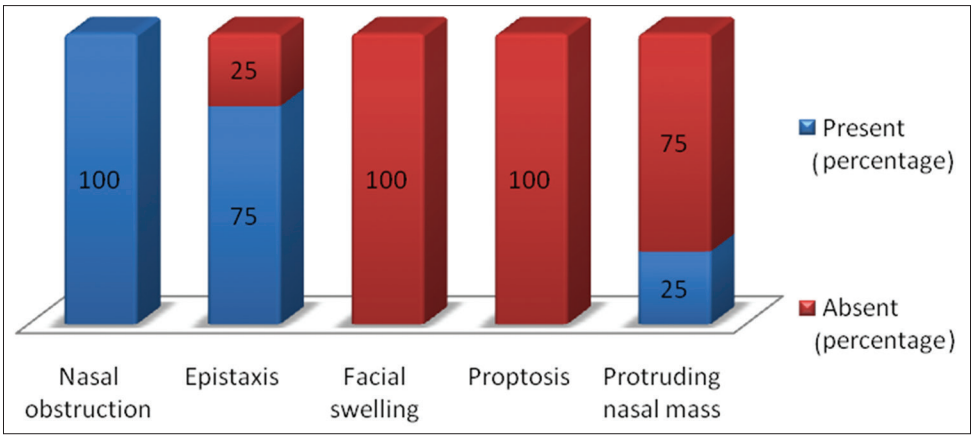

Figure 2: Symptoms

Table 5: Correlation between stages of disease and recurrence

Stage	Number of patients	Recurrence
1	3	Nil
2	0	
3	1	Nil
4	0	

- The incidence of angiofibroma as calculated from the average number of patients attending ENT OPD in 1/10000 population.
- Earlier stage (Stage 1) presentation is diagnosed earlier due to CT scan and diagnostic nasal endoscopy.
- Nasal obstruction and epistaxis are the most common presentation of angiofibroma Figure 2.
- Young adolescent male with profuse epistaxis and nasal obstruction suspected for JNA.
- Diagnostic nasal endoscopy and CECT[8] scan are the most common modalities used for diagnosis and staging of JNA. MRI is an additional tools for extension of the tumor mass Table 4.
- Three patients needed blood transfusion intraoperatively.
- Intranasal endoscopic approach was used in all patients.
- Regular follow-up is essential to find out recurrence [12] and residual disease Table 5.
- Conducting regular school camps to detect JNA early in all cases of epistaxis to create awareness of people.

REFERENCES

1. Chandler JR, Goulding R, Moskowitz L, Quencer RM. Nasopharyngeal angiofibromas: Staging and management. Ann Otol Rhinol Laryngol 1984;93:322-9.
2. Zito J, Fitzpatrick P, Amedee R. Juvenile nasopharyngeal angiofibroma. La State Med Soc 2001;153:3958.
3. Pryor SG, Moore EJ, Kasperbauer JL. Endoscopic versus traditional approaches for excision of juvenile nasopharyngeal angiofibroma. Laryngoscope 2005;115:1201-7.
4. Mann WJ, Jecker P, Amedee RG. Juvenile angiofibromas: Changing surgical concept over the last 20 years. Laryngoscope 2004;114:291-3.
5. Close LG, Schaefer SD, Mickey BE, Manning SC. Surgical management of nasopharyngeal angiofibroma involving the cavernous sinus. Arch Otolaryngol Head Neck Surg 1989;115:1091-5.
6. Krekorian EA, Kato RH. Surgical management of nasopharyngeal angiofibroma with intracranial extension. Laryngoscope 1977;87:154-64.
7. Jafek BW, Nahum AM, Butter RM, Ward PH. Surgical treatment of juvenile nasopharyngeal angiofibroma. Laryngoscope 1973;83:707-20.
8. Jacobsson M, Petruson B, Svendsen P, Berthelsen B. Juvenile nasopharyngeal angiofibroma: A report of eight cases. Acta Otolaryngol 1988;105:132-9.
9. Carrau RL, Snyderman CH, Kassam AB. Juvenile angiofibroma. In: Myers EN, editor. Operative Otolaryngology-Head and Neck Surgery. Philadelphia, PA: WB Saunders, Elsevier; 2008. p. 39-49.
10. Andrade NA, Pinto JA, Nóbrega Mde O, Aguiar JE, Aguiar TF, Vinhaes ES, *et al.* Exclusively endoscopic surgery for juvenile nasopharyngeal angiofibroma. Otolaryngol Head Neck Surg 2007;137:492-6.
11. Howard DJ, Lloyd G, Lund V. Recurrence and its avoidance in juvenile angiofibroma. Laryngoscope 2001;111:1509-11.
12. Roger G, Tran Ba Huy P, Froehlich P, Van Den Abbeele T, Klossek JM, Serrano E, *et al.* Exclusively endoscopic removal of juvenile nasopharyngeal angiofibroma: Trends and limits. Arch Otolaryngol Head Neck Surg 2002;128:928-35.

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