Acta Scientific Otolaryngology (ISSN: 2582-5550)

Volume 3 Issue 11 November 2021

Poster Presentation

Isolated Embolization case of Juvenile Nasopharyngeal Angiofibroma

Slimani Mohamed Cherif*, Ouennoughi Kheireddine, Daoud Fouad, Habouchi Mohamed Amine, Ouchene Abdelghafour, Boudechiche Lyes, Bencheikh Maamar and Benchaaba Nassima

Department of Medicine, Saad Dahleb University, Blida, Algeria

***Corresponding Author:** Slimani Mohamed Cherif, Department of Medicine, Saad Dahleb University, Blida, Algeria.

Received: September 16, 2021

Published: October 20, 2021

© All rights are reserved by **Slimani Mohamed Cherif., *et al.***

Introduction

- Juvenile nasopharyngeal angiofibroma (JNA) is a locally aggressive benign vascular tumor, it accounts for 0.05% of all head and neck tumors occurring in 1 of 150,000 individuals.
- The age of onset is between 10 to 25 years marked by nasal obstruction and recurrent unilateral epistaxis.
- Surgical removal remains the gold standard for the management of this disease almost done nowadays via Endoscopic Techniques, after angiographic mapping and preoperative intra-arterial embolization (PIAE).
- The prognosis is correlated to the extension of the tumor (aggressive power) and the frequency of recurrence.
- The external carotid artery in 64% of cases vascularize JNA [3], few cases from the internal carotid artery are reported [1,2].

Case Report

We receive Mr A.S 18 years old male patient on February 2019 presented with repeated right epistaxis and complaining of bilateral nasal obstruction evolving since 02 years, the mass is likely obliterate total right nasal cavity, firm on gentle palpation, extending to the homolateral nasopharynx and pushing the septal cartilage to the contralateral side, the olfactory region is free, intraoral examination revealed a firm swelling of right hard palate, overlying mucosa appeared healthy, absence of lymph nodes and any pathological sign at extraoral or neuro-ophthalmological exams.

Treatment

We dissect the tumor using Medial maxillectomy and Modified Denker's technique to access to right infratemporal fossa along the posterior wall of maxillary sinus who was empty by the way, we pursue the dissection by doing total right ethmoidectomy and sphenoidotomy, skull base is intact.

The procedure is done under General Anaesthesia.

Surgical suites

Intraoperative blood loss estimated at less than 400 ml, with no complications such as bleeding or thromboembolic occlusion, Nasal cleansing done on Day five postoperatively without any haemorrhagic incident.

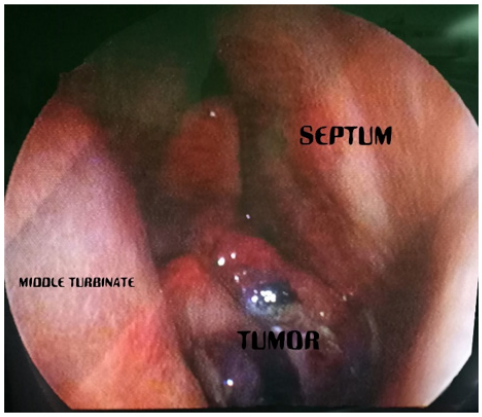


Figure 1: Preoperative endoscopic view of the tumor.

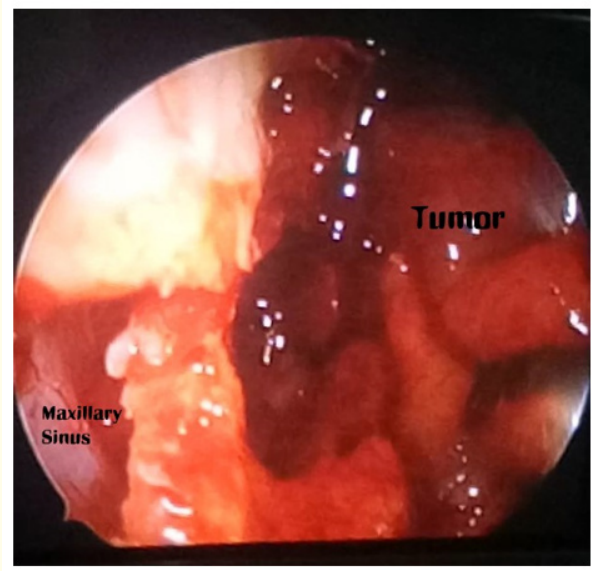


Figure 2: Opening anterior wall of the maxillary sinus through modified Denker's approach, the sinus is free.

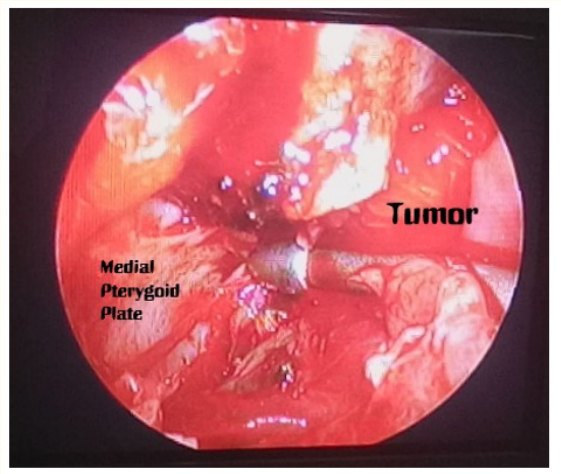
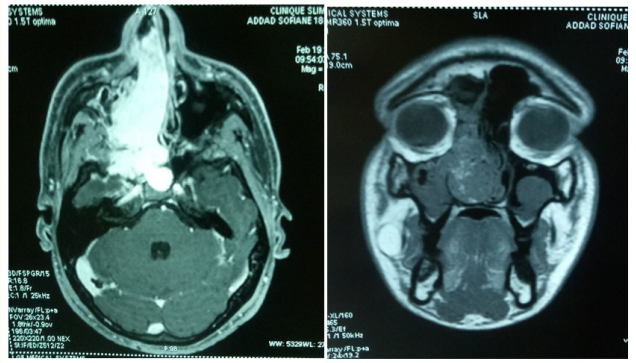


Figure 3: Intraoperative endoscopic view of the tumor, who invaded the medial pterygoid plate and extending laterally to the pterygomaxillary fossa, infratemporal fossa and posteriorly in the sphenoid sinus.

Histological analysis

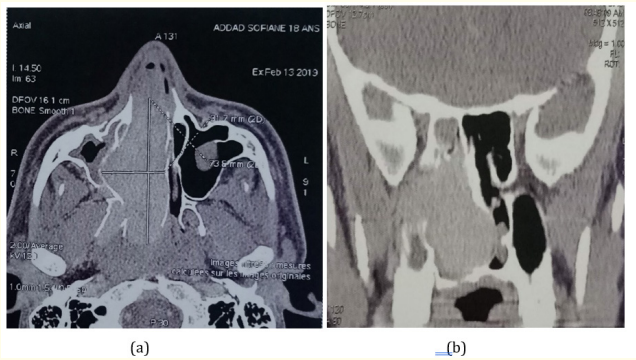
A benign tumor proliferation of a mesenchymal nature, made up of a double fibrous and vascular contingent consistent with the diagnosis of a Juvenile Nasopharyngeal Angiofibroma.

Imaging lecture



(a) (b)

Figure 4: Preprocedural MRI axial (a) and coronal (b) views showing large right nasopharyngeal mass (Hyper signal in T2 weighted, intermediate signal in T1 weighted) pushing medially the septal cartilage, and the lateral wall of maxillary sinus with expansion to the sphenoid sinus posteriorly and right infratemporal fossa, without intracranial or skull base invasion, the tumor is classified IIc according to Radkowski stage.



(a) (b)

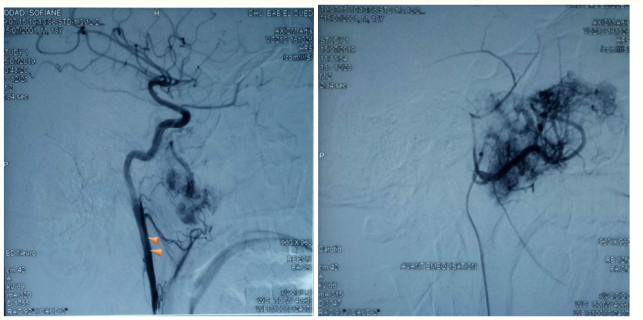
Figure 5: Periprocedural CT scan axial (a) and coronal (b) views showing invaded right medial pterygoid plate.

Digital subtraction angiography (DSA) lecture

DSA highlights the JNA specific vascularization patterns, guiding the surgeon to plan the approach and to delineate lesion areas of increased bleeding risk.

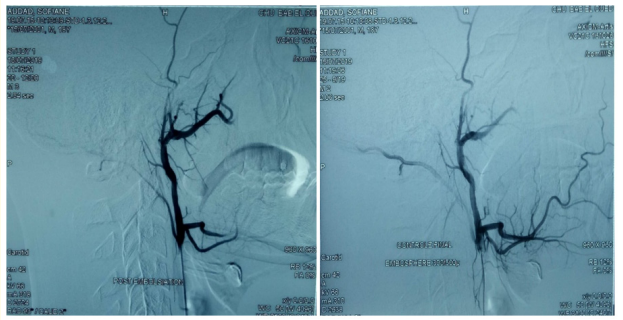
The embolization was done 24 hours before the surgery with embospheres 300/500µ.

There were any complications such as vascular dissections, groin hematomas or other complications related to vascular micro catheterization or embolization.



(a) (b)

Figure 6: Views of JNA Preoperative DAS (a) show right ascending pharyngeal artery derived from Internal carotid artery (ICA) (orange head arrows) who vascularize 20 % of the tumor plus meningeal artery branches from the inferolateral Trunk of right ICA, periprocedural DAS (b) large feeders from right Internal maxillary artery (80%) of tumoral Blush and some supply branches from contralateral external carotid artery.



(a) (b)

Figure 7: Postprocedural DSA (a) and final control (b), satisfactory result of selective embolization of right and left ECA branches using Embospheres 300/500µ.

Bibliographic Analysis and Discussion

We performed a search on the PUBMED MeSH database following the builder: ((["Nasopharynx"[Mesh]) AND "Angiofibroma"[Mesh]) AND "Carotid Artery, Internal"[Mesh] finding a single article which does not meet our expectations [4].

A new direct search on the same engine by typing: "Ascending pharyngeal artery from internal carotid artery" we found: 11 articles on the above-mentioned anatomical variant, no article objectifying a nasopharyngeal fibroma vascularized by an APA branch of ICA.

In a publication by the ENT department team, Rhinology division, San Francisco hospital [3] November 2018, a retrospective review of 26 cases of FNP (1995 - 2015) for which they benefited from preoperative arterial embolization in the same institution, finding 18 cases (69.2%) have a supply by ECA and ipsilateral ICA, bilateral vascularization in 14 cases (53.8%).

The involvement of each vessel was counted for each side: the distal branches of the internal maxillary artery for ECA (38 times) and the vidian artery for ICA (32 times) were the most involved.

The systematic review of 828 cases of FNP drawn from 63 studies (24 clinical cases, 38 series of cases, 01 prospective study) benefited from angiography, of which 768 cases embolized during the same period (1995 - 2015) found a tumor supply dependent on ECA in 533 cases (64%), 291 cases (35%) by ECA + ICA, only 4 cases (0.4%) on ICA.

Conclusion

Through this modest work, we ENT surgeons will have to map the vascularization of all JNA, in order to:

- Better understand tumor behaviour,
- To improve the quality of dissection,

- To well inform our patients about the prognosis,
- Moreover, reduce the morbidity linked to the surgical procedure.

Bibliography

1. Kaneko K., *et al*. "Unilateral anomalous left common carotid artery; a case report". *Anatomischer Anzeiger* 178 (1996): 477-480.

2. Simon De Freitas and Mahmoud B Malas. "Ectopic origin of the ascending pharyngeal artery: implications for carotid surgery". *Surgical and Radiologic Anatomy* 40.10 (2018): 1181-1183.

3. Overdevest JB., *et al*. "Patterns of vascularization and surgical morbidity in juvenile nasopharyngeal angiofibroma: A case series, systematic review and meta-analysis". *Head Neck* 40.2 (2018): 428-443.

4. Succo G., *et al*. "Spontaneous ICA rupture: a severe late complication after giant nasopharyngeal angiofibroma resection". *International Journal of Pediatric Otorhinolaryngology* 77.4 (2013): 581-584.

Volume 3 Issue 11 November 2021
© All rights are reserved by Slimani Mohamed Cherif., *et al.*