

JUVENILE NASOPHARYNGEAL ANGIOFIBROMA - EXCISION THROUGH LATERAL RHINOTOMY AND SUBLABIAL APPROACH - A CASE REPORT

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Introduction

Juvenile angiofibroma is a rare hypervascular, locally aggressive benign tumour which is exclusively found in the nose and paranasal sinuses of male adolescents. The definitive treatment for this tumour is complete surgical excision. Different surgical approaches are used for complete excision. Most recent development is excision of the tumour using endoscopes. But in certain cases with large size and different extensions, open transfacial approaches are the choice for complete removal and for less operative bleeding, which are the main challenges for surgical excision of this tumour.

Case Summary:

A 16 year old male patient admitted in the male ward of ENT & HNS, Sylhet MAG Osmani Medical College Hospital, Sylhet, with the complaints of bilateral progressive nasal obstruction with recurrent bouts of epistaxis since last one and half yr, voice change since last 1yr. On clinical examination right cheek swelling is noticed which was firm on palpation just below the right malar eminence (Fig-1). Anterior rhinoscopy reveals a reddish mass in the right nasal cavity, almost fixed and firm on probing. Post nasal space examination shows a similar looking huge reddish mass involving the whole of the nasopharynx with bulging of

the soft palate. X-ray of the paranasal sinuses was done, which shows opacity in the right maxillary antrum and right nasal cavity region. A CT of axial (Fig. 2) and coronal plane (Fig. 3) shows a huge isodense shadow involving the nasopharynx, right nasal cavity, right maxillary antrum, right pterygopalatine fossa and right infratemporal region. Routine exam of blood, urine, CXR, ECG reveals no abnormality. Based on clinical findings and radiological evaluations it was diagnosed as a case of juvenile nasopharyngeal angiofibroma and planed for surgical excision under GA through right lateral rhinotomy and sublabial approach. After getting written informed consent and sufficient pre-operative measures, including 4 units of fresh blood in hand, the patient was operated using hypotensive anaesthesia, in supine and 15⁰ head end up position. Through right lateral rhinotomy (Fig. 4) and sublabial incision (Fig. 5), the tumour was approached by medial maxillectomy with exposure of right maxillary antrum and right sphenopalatine foramen region, from where the tumour has originated. Through the sublabial approach, after blunt dissection, the check extension was reached and with digital pressure and dissection it is pushed into the nasopharynx along with subperiosteal dissection of the main mass. Then the whole mass (Fig. 6) was removed along with

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its extensions per orally with help of a Boyle-Davis mouth gag. Per-operative bleeding was average, no injury to adjoining structures occurred and no part of the tumour was left, in gross eye vision. The newly formed whole cavity was packed with Ribbon pack mixed with antibiotic ointment. Both the lateral rhinotomy and sublabial incision was closed in layers and dressed in proper way. The pack was removed per nasally after 48 hours. No bleeding occurred at that time but there was some inflammatory soft tissue swelling seen in right cheek (Fig-7). No vision problem and ephiphora seen in right eye. After removing stitches on the skin, the patient was discharged after 10 days of operation.



Fig.-1: Preoperative photograph with right cheek swelling.



Fig.-2: CT scan of paranasal sinuses in axial plane.

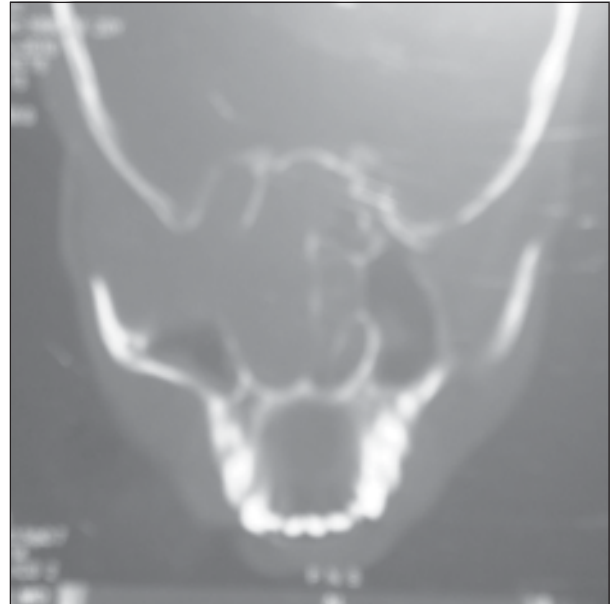


Fig.-3: CT scan of paranasal sinuses in coronal plane.

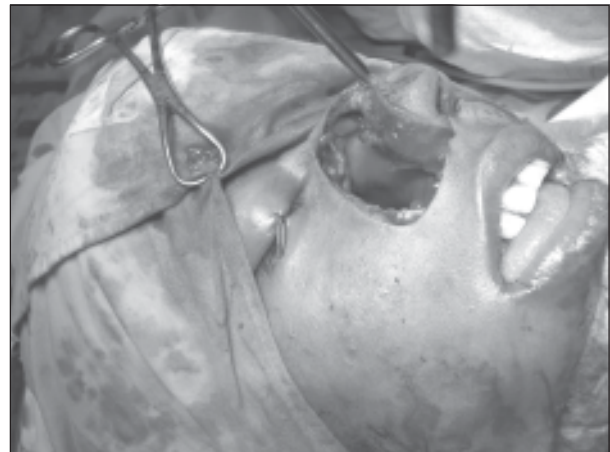


Fig.-4: Right lateral rhinotomy approach.

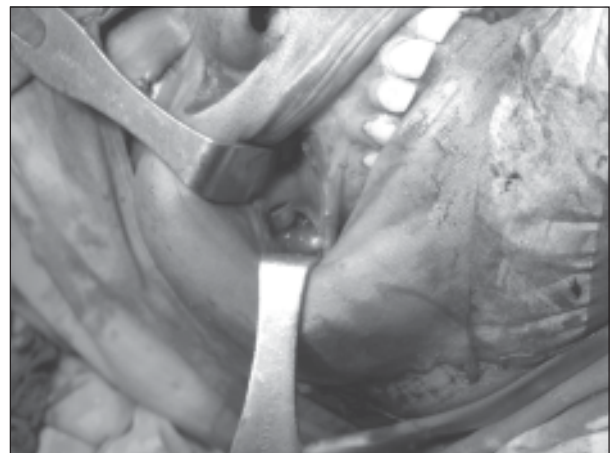


Fig.-5: Right upper sublabial approach.

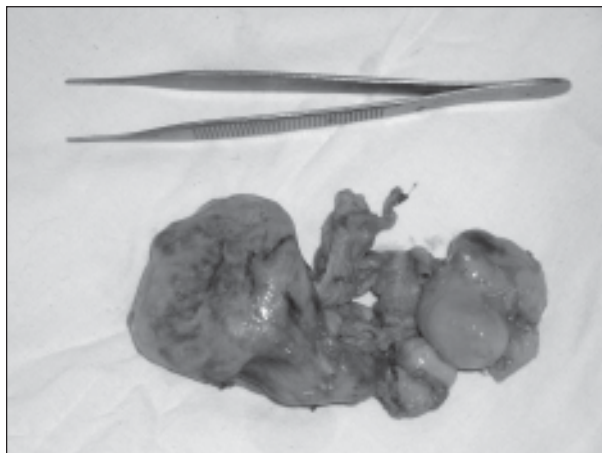


Fig.-6: The resected angiofibroma en block.



Fig.-7: Post operative photograph (7th POD) with inflammatory right cheek swelling.

Discussion

Juvenile nasopharyngeal angiofibroma, which accounts for less than 0.5% of all head-neck tumours is a rare, benign, non-encapsulated tumour arising usually from the superior margin of the sphenopalatine foramen or the pterygopalatine fossa at the aperture of the vidian canal¹. It has a high rate of recurrence.

The tumour is most common in northern India, although the reasons for these are unknown². Clinical examinations often shows a tumour in the nasal cavity and nasopharynx, but CT and MRI best demonstrates the extent of the tumour and its accompanying bony erosions. Angiography is rarely indicated. Biopsy should be avoided unless clinical and radiological examinations are not diagnostic, because of the risk of bleeding.

The tumour grows submucosally along the roof of the choana to reach the posterior border of the septum and then expands further to present in the nasal cavity and nasopharynx. The tumour can further extend to the pterygopalatine fossa, infratemporal fossa, temporal fossa and orbit and can also grow intracranially³.

Surgical excision is the treatment of choice. The approach to the tumour can be transpalatal, transantral, lateral rhinotomy, midfacial degloving, maxillary swing, transzygomatie, transmandibular, transhyoid, or via craniofacial resection or the natural orifices, depending upon the tumour's extension. The other modalities of treatment are radiotherapy, hormone therapy, cryotherapy, electro-coagulation, sclerotherapy and chemotherapy; these are considered as adjuncts to the surgical treatment of extensive tumours. Primary radiation therapy for angiofibroma at doses of 3000-3500 cGy, has been considered in few centres⁴. Recent advancement in technology and techniques have made endoscopic excision of angiofibroma possible. Based on the experience of endoscopic sinus surgery and transnasal endoscopic vidian neurectomy, Kamel first suggested endoscopic transnasal surgery for angiofibroma in 1996⁵. Endoscopic exposure and excision is considered to be the first choice of surgical approach in cases of limited angiofibroma involving the posterior part of the nasal cavity, nasopharynx, sphenoid sinus, and pterygopalatine fossa. Endoscopes can also be used to complement conventional surgery, enabling endoscope-assisted surgery for extensive lesions.

Generally tumour removal from the infratemporal and pterygomaxillary regions can be supplemented by sublabial and buccolabial incisions. The tumour should be excised in the submucosal and subperiosteal planes, displaced and then finally delivered either transnasally or transorally. New tumours can be excised en-block by blunt dissection and recurrent tumours can be excised with the help of a laser, microdebrider, image guidance system and frozen section pathological analysis.

Surgical management of angiofibroma can be complicated by excessive haemorrhage and persistent of residual lesion. These complications are always reduced if the tumour is extirpated with its roots. The ideal surgical approach should enable direct access to the origin and extensions of the tumour. The transpalatal approach has been recommended for lesions of less than 5cm, but it gives exposure to only the inferior surface, without any direct visualization of the superior attachments. The lateral rhinotomy and other transfacial approaches give excellent exposure of the roots and extensions of the tumour, but leave a facial scar. The endoscopic approach has the distinct advantage of direct access to the tumour origin and extension areas without any facial scar, reduced bleeding and lower incidence of residual lesion. In addition this approach has the advantage of reduced morbidity, shorter hospital stay and avoidance of the problems of open surgery i.e. epiphora, dysaesthesia, pain and the possible effects on facial growth⁶. To reduce perioperative haemorrhage some authors recommended pre-operative embolization of the tumour through external carotid catheters⁷.

Conclusion:

Endoscopic resection is a feasible and safe treatment for angiofibroma. However, it has some limitations. Open approaches like lateral rhinotomy and sublabial routes are also appropriate in some cases based on extensions.

Main disadvantages for these routes are remaining of a facial scar and greater patient morbidity. Above all, in addition to advantages and disadvantages of different procedures of tumour resection, the main aim of surgery is complete removal and reduced bleeding during surgery.

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