NASOPHARYNGEAL ANGIOFIBROMA WITH CAVERNOUS SINUS INVOLVEMENT - AN UNUSUAL PRESENTATION

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ABSTRACT : Juvenile nasopharyngeal angiofibroma (JNA) is a benign vascular tumour which is locally aggressive and occasionally extends intracranially. It occurs mainly in adolescent males. We report an interesting case of a large JNA with intracranial extension encroaching on the cavernous sinus which we treated surgically by the conventional lateral rhinotomy and transpalatal approach.

INTRODUCTION

Juvenile nasopharyngeal angiofibroma (JNA) is an uncommon benign vascular tumor occurring almost exclusively in pre-pubescent or pubescent males. The triad of epistaxis, nasal obstruction and the presence of a nasopharyngeal mass strongly indicates an angio-fibroma, especially when seen in an adolescent male. It accounts for less than 0.05% of head and neck tumors (Waldman et al, 1981). Its incidence has been stated to be as low as one in 50,000 otolaryngological new patients (Chandler et al, 1984). Intracranial extension has been observed in 20-30% patients with JNA (Jafek et al, 1979; Cummings et al 1984).

It is a benign tumor and is locally aggressive eroding adjacent bone and growing through natural foramina and fissures thus gaining an easy access into the cranium and the infratemporal region. The intracranial extension is either through erosion of the sphenoid sinus through the sella medial to the carotid artery and lateral to the pituitary gland or via erosion of the greater wing of sphenoid through the middle cranial fossa anterior to the foramen lacerum and lateral to the cavernous sinus and carotid artery.

In this paper we report our experience of an unusual presentation of a huge JNA with intracranial extension into the middle cranial fossa, which encroached the cavernous sinus. We treated it surgically by the conventional combined lateral rhinotomy and transpalatal approaches. The entire tumor including the intracranial extent was removed without opening the cranium.

CASE REPORT

A 17 year old boy was referred to us with chief complaints of right sided nasal obstruction, repeated episodes of

epistaxis and a nasal twang since a period of 1 year. The patient was alright 1 year back when he started experiencing a right sided nasal obstruction which was gradually increasing. He also complained of repeated episodes of epistaxis, which increased to 10-15 cc of fresh blood daily. The epistaxis was controlled by the patient by lying in the supine position. There was no headache,

Fig. 1 : X-Ray lateral view of nasopharynx showing a huge mass in the nose, nasopharynx and oropharynx.

Fig. II : (A) Contrast CT scan axial view showing a large well defined moderately enhancing mass involving the right nasal cavity, nasopharynx, pterygopalatine fossa and infratemporal fossa.

Fig. II (B) Contrast CT scan coronal view showing a large well defined moderately enhancing mass involving the nasopharynx, infratemporal fossa and extending into the sphenoid sinus and middle cranial fossa.

Fig. II (C) A contrast CT scan coronal view showing the enhancing mass involving the right cavernous sinus.

vomiting, diplopia or any other symptoms suggestive of raised intracranial tension or involvement of the cavernous sinus. The patient occasionally complained of bleeding from the mouth.

On general examination, the patient was anaemic. There was widening of the bridge of the nose. Anterior rhinoscopy showed purulent discharge in the right nasal cavity and a huge reddish lobulated mass seen extending into the oropharynx behind the palate for about 2 cm.

Hematological investigations of the patient were as follows Haemoglobin = 6 gm%, PCV = 42 GM%, MVC = 65 fl., MCH = 25 pg. ; MCHC = 25%, BUN = 15 mg%, Serum creatinine 0.5 mg%, Serum Na 133 mEq/L, Serum K 3.5 mEq/L, ESR = 9 mm at the end of the Serum Ca = 9 mg%.

On radiographic investigations the X-ray chest was normal. The X-ray paranasal sinuses Water's and Caldwell's view showed haziness in the right nasal cavity and right maxillary sinus without bony destruction. The

Fig. III : Gross appearance of the specimen.

Fig. IV : Microphotograph showing features of angiofibroma (H & E) x 400.

X-ray nasopharynx revealed a mass occupying the entire nasal cavity, nasopharynx and upper part of the oropharynx (Fig. 1).

The contrast CT scan axial and coronal views revealed a large well defined moderately enhancing nasopharyngeal mass extending into the right nasal cavity with widening of the pterygopalatine fossa on the right side. It was extending into the infratemporal fossa laterally, into the sphenoid sinus, right optic canal and middle cranial fossa encroaching on the posterior and medial aspect of the right cavernous sinus superiorly and into the oropharynx inferiorly (Fig. II, A, B, C.).

The diagnosis of JNA with intracranial extension (cavernous sinus) was made and the patient was advised surgery – combined lateral rhinotomy with transpalatal approach. Pre-operatively, 5 units of blood were transfused to the patient to bring the haemoglobin to 11 gm%. General anaesthesia was given. The right external carotid artery was ligated. A lateral rhinotomy and transpalatal incisions were taken. The lateral rhinotomy incision was extended sublabially. The flaps were elevated and the maxillary antrum was opened and inspected. The medial wall of the

maxilla, especially the anterosuperior part was removed partially to expose the tumour which was then inspected and it was gently dissected out by finger dissection and gentle traction from all its anterior and superior attachments including infratemporal, nasopharyngeal and lastly the intracranial part was removed by guarded traction and dissection. Brisk bleeding from the venous plexus of the right cavernous sinus ensued but was controlled with gentle pressure applied over gelatin sponge, reinforced with moistened cottonoids. After removal of the intracranial part, the defect in the periosteum and medial wall of the right cavernous sinus was seen. No CSF leak was found. No attempt was made to repair the defect. Simultaneously, through the transpalatal incision removal of the nasopharyngeal attachments of the tumor was done by finger dissection.

In spite of ligation of the right external carotid artery, the patient bled profusely and we had to transfuse 3 pints of blood and 2 pints of fresh frozen plasma peroperatively and 2 pints of blood in the immediate post-operative period. Anterior nasal packing was done and the incisions were sutured. The pack was removed in the operation theatre after 72 hours under general anaesthesia and we encountered no active bleeding.

The gross appearance of the tumour was a round, nodular, nonencapsulated pink mass which measured 8 cm x 9 cm x 4 cm. Histopathological examination revealed fibrous connective tissue with endothelium lined /spaces confirming the diagnosis of angiofibroma (Fig. III & IV).

DISCUSSION

Juvenile nasopharyngeal angiofibroma (JNA) is a locally aggressive benign vascular tumor. It affects mainly adolescent males and the diagnosis is often made at a relatively late stage, after the patients have had symptoms for several months. The typical initial symptoms include nasal obstruction, epistaxis, pain, nasal discharge and hearing impairment (Jacobsson et al, 1988). The diagnosis and assessment of tumour extension are made on the basis of clinical symptoms and radiographic investigations, including computed tomography (CT) and angiography.

A staging system similar to that proposed for cancer by the American Joint Committee has been suggested by Chandler et al in 1984. According to this classification, in Stage I tumor is confined to the nasopharynx and in Stage

II tumor extends into the nasal cavity and/or sphenoid sinus. In Stage III, tumor extends into one or more of the following : maxillary antrum, ethmoid sinus, pterygomaxillary and infratemporal fossae, orbit and/or cheek. Tumor extension intracranially is Stage IV.

Treatment modalities include pre-operative arterial embolization (Bryan et al, 1981) and surgery (Ward, 1983). In cases with intracranial extension of the tumor which occurs in 10% to 20% (Jafek et al, 1973) different modalities of treatment have been tried such as irradiation (Ward, 1983) or intracranial surgery (Jafek et al, 1973).

Tumors invading the cavernous sinus have generally been considered inoperable because of the high likelihood of bleeding from the cavernous venous plexus, or potential injury to the internal carotid artery or one of the cranial nerves (Sekhar et al, 1986). In addition, surgical defects in the dura surrounding the cavernous sinus can be difficult to repair, leading to the possibility of an uncontrollable cerebrospinal fluid leak (Mickey et al, 1988). Based largely on these concerns, most surgeons addressing the treatment of intracranial angiofibromas have advocated either non-surgical treatment or incomplete resection of tumor involving this structure (Fisch 1983); Goepfert et al, 1985).

The unusual and interesting findings in our case are that in spite of being a large and extensive JNA, the patient had no symptoms of intracranial and/or cavernous sinus involvement. Since the tumor is benign, encapsulated and extradural it was dissected out by gentle traction and finger dissection by combined transpalatal and lateral rhinotomy approach. The advantage of this approach is that it is less morbid than intracranial surgery which involves traction on the cerebrum with risk of convulsions postoperatively. Moreover, the patient has less risk of anaesthesia and other complications of intracranial surgery. Therefore, we recommend it for JNA with intracranial extension in selected cases.

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UNUSUAL FOREIGN BODY IN THE TRACHEA

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ABSTRACT : *A great variety of foreign bodies in the tracheobronchial tree have been reported, but presence of fractured tracheostomy tube as foreign body is rare¹. Usually fractured pieces of outer tube are found in the bronchus or trachea near the carina, but occurrence of inner tube in the upper part of the trachea is rare² and one such case is presented here.*

Key words : *Trachea, Foreign body, Tracheostomy tube*

CASE REPORT

A 20 year old male was admitted with history of inhaled tracheostomy tube. He had mild respiratory distress. He had undergone tracheostomy and insertion of Fuller's tube five years back to respiratory distress due to bilateral abductor paralysis of the vocal cords. He did not undergo lateralization of the vocal cords as planned by the surgeon and he was lost for followup. He was using the inner tube alone since 4 months following breakage of outer tube. Inner tube was broken at its neck and was inhaled 2 days prior to presentation. Following inhalation he had a bout of violent cough and he noticed the tube across the tracheostoma. X-ray neck was taken which showed inner tube across the stoma. (Fig.I). He was taken to the theatre where surgery was performed under local anaesthesia, the tube was slid down, since it was not

Fig. I : X-ray of neck showing tracheostomy tube

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