SURGICAL APPROACHES USED FOR THE EXCISION OF ANGIO FIBROMA

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SUMMARY

A retrospective study of 36 patients of Angiofibroma was carried out at ENT "A" unit of Khyber Teaching Hospital, Peshawar over a period of 5 years from July 1996 to June 2001. All the patients were male with age range form 09-18 years and mean age of 14 years. The main presenting features included recurrent bouts of unilateral epistaxis and nasal obstruction. Apart from conventional X-ray of the sinuses and nasopharynx CT scan was done in every patient to determine all possible extensions of the tumour and like wise in selecting a proper surgical approach. The most commonly employed surgical approach was the transpalatine one which was used in total of 30 patients (83%). In 18 cases it was used as a single approach while in the remaining 12 it was coupled with other approaches i.e. with sublabial approach in 08 cases and lateral rhinotomy in 04 cases. The later approach was use as a single approach in 04 cases while the transmaxillary approach in 02 cases. On the average 3 units of blood was transfused per patient intraoperatively. No major morbidity and mortality was observed. Combination of transpalatine and sublabial approach have been found better for ablation of the tumour involving nasal, nasopharyngeal and cheek regions. As follow up over all recurrence rate of the tumour was found out to be 19.4%.

INTRODUCTION

Angiofibroma, formerly called juvenile nasopharyngeal angiofibroma, is a benign connective tissue tumour of high vascularity of adolescent males which takes origin in the region of the sphenopalatine foramen lying above the vertical plate of the palatine bone.[1] Though benign in nature it behaves like a malignant tumour and spreads to adjoining regions of the nose, nasopharynx, orbit, cheek, infratemporal fossa and intracranially. It occurs exclusively in males and

AGE WISE INCIDENCE

No.	Age of Patients	Number	% Age
1.	09 years	07	2.78
2.	10 years	02	5.56
3.	11 years	04	11.11
4.	12 years	06	60.66
5.	13 years	07	19.44
6.	14 years	05	13.96
7.	15 years	04	11.11
8.	16 years	04	11.11
9.	17 years	02	5.56
10.	18 year	01	2.78

TABLE – 1

especially in adolescent age group growing extensively under the effect of androgenic hormones.[2] Extension of the tumor into nearby vital regional coupled with large quantity of blood loss during surgery not only makes the disease a life threatening situation for the patient but also a very horrible experience for the operate. The tumor is known for recurrence mainly due to left over tissue during surgery.

MATERIAL AND METHODS

The following methodology was adopted for the proper management of the tumor alongwith its extension.

1. Printed proforma was use for documenting relevant information about the tumour which included important features of the clinical history, examination and appropriate investigations. The latter included Hb gm% estimation as majority of the patients looked anemic, TLC, DLC and Urinalysis, X-rays paranasal sinuses, OM view and Nasopharynx lateral view. CT scan was done in every patient to reveal all possible extensions of the tumour.
2. Pre-operative biopsy was done only in 04 patients where the clinical features were not very conclusive and the aim was to rule out other pathologies of the region.
3. No pre-operative hormonal or radiotherapy was employed and like wise no carotid artery ligation was attempted as their role to reduce blood loss during surgery has been proved to be non convincing. Therapeutic embolization of the feeding vessels, a modern technique with high rate of success to reduce blood loss, could not be used due to non--availability of the facility and expertise.
4. 19 patients were transfused 1-2 units of blood pre-operatively to correct their status of anemia while 3 pints of screened blood on the average was transfused per case during surgery to cope up for the blood loss. 1-2 drips of plasma expander were also used per patients.

MAIN PRESENTATIONS OF THE TUMOUR

No.	Clinical features	No. of cases	% Age
1.	Nasal obstruction	36	100
2.	Recurrent epistaxis	32	88.88
3.	Tumour visible in Nasopharynx	30	83.33
4.	Tumour seen in nose	24	66.66
5.	Speech defects	24	66.66
6.	Insilateral conductive deafness	12	33.33
7.	Swelling cheek	8	22.22
8.	Proptosis	7	19.44
9.	Headache	7	19.44
10.	Fulness of temporal region	2	5.56
11.	Instracranial extension	Nil	Nil

TABLE – 2

SURGICAL APPROACHES USED FOR TUMOUR CLEARANCE

No.	Type of approaches	No. of Patients	% age
1.	Transpalatine Approach:- i. Used as a single approach in 18 cases ii. Combined with other approach in 12 cases	30	83.33
2.	Sublabial Approach:- (combined in all 08 cases with transpalatine approach)	08	22.22
3.	Lateral Rhinotomy:- i. Used alone in 04 cases ii. Combined with transpalatine approach in 04 cases	08	22.22
4.	Transmaxillary Approach via Modified Weber Ferguson's incision (As a single approach).	02	5.55

TABLE – 3

5. The basic mode of the treatment consisted of various surgical approaches tailored according to extensions of the tumor. Surgical and expert anesthetics team carried out the procedure and every patients was monitored closely during and immediately after surgery.
6. Regular follow up of the patients was practiced at a monthly interval for one year and then 02 monthly for another year to detect complications of the surgery and especially recurrence of the tumor.

RESULTS

In this study of 365 patients all of them (100%) belonged to male gender with an age range from 9-18 years and mean age of 14 years. Age wise incidence is depicted in table No.-1 Patients from almost all part of the province were included in the study. The majority belonged to Peshawar and adjoining areas including Afghan refugees as well. Majority of the patients had the predominant features of recurrent epistaxis, unilateral nasal obstruction and anaemia. The remaining clinical features included speech disorder (24 cases), Swelling cheek (08 cases), proptosis (07 cases) etc as shown in table No.-2. No intracranial extension was detected in any patients. All the patients underwent curative surgery. The various surgical approaches adopted included transpalatine approach in 30 cases i.e. alone in 18 patients and in combination with other approaches in the remaining 12 patients (Table-3) Blood loss on the average was 2200 ml per case which was replaces with equivalent amount of blood. 08 patients went into hypovolumic shock (BP less than 60/40 mm.Hg) during surgery while 03 sustained cardio respiratory arrest. Luckily they were resuscitated. Postoperative complications included nasal crusting (32 cases), speech defect (07 cases), palatal fistuale (06 cases) and tumor recurrence in 07 patients (Table-4).

DISCUSSION

Angiofibroma is a horrible but at the same time a very fascinating tumor and every aspect of its has been thoroughly discussed in the literature. Modern investigations have helped a lot in understanding the pathogenesis and behaviour of the tumor thus offering a more plausible mode

SURGICAL COMPLICATIONS

No.	Type of complications	No. of patients	% Age
A)	Immediate (intraoperations):-		
1.	Hypovloumic shock (BP less than of 60/40 mm Hg)	08	22.22
2.	Cardiac arrest	02	5.55
B)	Late complications:-		
1.	Nasal crusting	32	88.08
2.	Speech defects	07	19.44
3.	Palatal fistulae	06	16.60
4.	Recurrence	07	19.44

TABLE – 4

of treatment. The term "Juvenile nasopharyngeal angiofibroma" was used for the first time by Chaveu[3] while Friedberg 1940[4] suggested the terminology of "Angiofibroma" which is now accepted world over.[5] It has been universally accepted to be the disease of males and androgen dependent as such receptors have been investigated in tumor tissue[2] like wise some degree of spontaneous involution of the tumor with advancing age and fall of androgenic hormones have been established in some cases.[6]

Conventional radiographs of the sinuses and nasopharynx can be misleading and should be supplemented with modern investigations; like CT scan and more recently MRI which have preempted the need for preoperative Angiography and biopsy.[7]

Surgery is the universal treatment of choice in most centres of the world however radiotherapy is reported to have been employed in some centres.[8] Special indications for the latter mode of treatment are recurrent tumors and those with inaccessible intracranial extension.[9] Various preoperative measures to reduce intraoperative blood loss like hormonal therapy, radiotherapy and external carotid artery legation were not resorted to in this series as compared to our previous study largely due to their uncertain role.[10] The real advanced procedures in this regard is the superselective therapeutic embolization of the internal maxillary artery (the principal feeding vessel of the tumour) and its branches which reduces the blood loss from massive quantum to lees than one unit.[11,12,13] But unluckily we lack such a facility which is available; only in one part of the country and other advanced centres of the world.[13] Among various surgical approaches, transpalatine one still holds its place for ablation of the tumor confined to the nose and nasopharynx and can be easily combined with other approaches according to the extensions of the tumors.[5] This time we employed this approach in 3-0 patients (83%) like; we did in the last study.[10] In the present series we combined it with the sublabial approach in 08 patients (22%) who had their tumours escaped into the cheek. The latter approach is quite simple and is made continuous with transpalatine approach around the greater tuberosity of the maxilla via gingivo buccal incision thus giving easy and direct access to the tumor clearance.[5,14] On follow up only one out of 08 such operated patients (12%) was detected having a recurrence. This cure rate is quite satisfactory when compared with other approaches.[14] Likewise no postoperative functional or cosmetic defect is detectable with sublabial approach.

In the present study overall prognosis in terms of cure rate of 81% and recurrence of 19% has improved has compared to our previous study i.e. cure rate of 67% and recurrence rate of 33%.[10] These figures are in keeping with most of the published series in the literature[15,16,17,18] it appears to be due to better detection of all possible extensions of tumor with the help of CT scan and likewise selection of appropriate surgical approaches.

CONCLUSION

Here is presented our experience with 36 patients of angiofibroma. CT scan and if available MRI are mandatory to plan for proper mode of treatment. Sub-labial approach if coupled with transpalatine approach ensure good clearance of the tumor confined to nose, nasopharynx with cheek extension.

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