ORIGINAL PROF-604

NASOPHARYNGEAL ANGIOFIBROMA

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ABSTRACT

OBJECTIVES: To find out incidence and best management of nasopharyngeal angiofibroma. **DESIGN OF STUDY:** Retrospective. **SETTING:** Nishtar Hospital, Multan and Allied Hospital Faisalabad. **PERIOD:** March 1995 to December 2001. **MATERIAL & METHOD:** Total 50 patients were studied. The data was collected on special proforma. The relevant investigation were carried out and the results of treatment and their complications were noted. RESULTS: Total 50 patients all male (100%) between 11 years to 20 years of age. The incidence of nasopharyngeal angiofibroma was 12.5 cases per year. The cure rate with surgery was 75%, failure rate (re-occurrence) 25% and mortality rate was 0%. **CONCLUSION:** The incidence of nasopharyngeal angiofibroma is quite considerable in our region and the best therapeutic modality is surgery.

KEY WORDS: Nasopharyngeal angiofibroma

INTRODUCTION

The nasopharyngeal angiofibroma is the commonest benign neoplasm of the nasopharynx. The exact aetiology is not known. A number of theories have been proposed over the years to explain the origin of nasopharyngeal angiofibroma such as periosteal fibroblastic theory, hormonal theory[1,2]. Hamartomatous theory, vascular malformation theory and paraganglionic theory.

Pathologically, on gross examination the tumour appears as pink or grey and the surface is nodular or lobulated. Microscopically the tumour is composed of stroma of fibrous tissue and vascular channels. The vessels lack the muscular coat in the tunica media and have only collagen fibers in the walls which is the main reason for persistent and excessive bleeding from the tumour tissue as the vessels are unable to contract.

The most common site of origin is the area of sphenopalatine foramen[18]. From the site of origin the tumour extends into the surrounding structures such as infra temporal fossa, cheek, intracranial cavity, nose and paranasal sinuses. The internal maxillary artery is the chief source of blood supply. The neoplasm is most commonly seen in males particularly during teenage. It is very rare in females but cases have been reported[3,4,5].

The main clinical features of the tumour are nasal obstruction and epistaxis. To know the extent of the tumour plain radiology, CT scan, MRI[6] and angiography are required in every case. The majority of the cases are diagnosed on the basis of history, clinical examination, radiology and angiography[7] so they obviate the need for pretreatment biopsy in majority of cases. The only effective treatment modality is surgery[8,9,10,11]. The surgical approach required to excise the tumour will depend upon the extent of the tumour into the surrounding structures. The radiotherapy[12,13,14] has only palliative role and is given in only those cases in which there is intracranial extension which is unresectable.

The prognosis regarding the surgery is good provided the tumour is completely resectable.

MATERIAL & METHODS

It was a retrospective study conducted on 50 patients suffering from nasopharyngeal angiofibroma in the department of ENT Nishtar Hospital Multan and Allied Hospital Faisalabad from March 1995 to December 2001 to determine the incidence of nasopharyngeal angiofibroma in our region, chalk out management and compare our results with international studies.

The patients were admitted through ENT OPD. After admission detailed history, clinical examination, routine investigations and special investigations such as plain radiolographs of nasopharynx, paranasal sinuses, skull base, CT scan, MRI and angiography were carried out to see the extent of the tumour into the surrounding structures.

Standard proforma was prepared duly filled for each patient and special consent was taken from every patient to carry out the study. Only those patients were included in the study in whom the post operative histological examination of the resected specimen confirmed the diagnosis of angiofibroma. All other patients were excluded form the study suffering from nasopharyngeal tumour apart from nasopharyngeal angiofibroma and also those patients who had received treatment elsewhere. The 40 patients were treated with surgery and 10 patients were treated with radiotherapy because of intracranial extension which was unresectable. The cases were followed for a period of 6 to 12 months. During follow up the recurrence of the tumour after surgery, response to radiation, complications, asymptomatic period, therapeutic failure and mortality rate were noted.

RESULTS

Total 50 patients suffering from nasopharyngeal angiofibroma, all males between 11 year to 20 years of age. The incidence of nasopharyngeal angiofibroma was 12.5 cases per year. The incidence of tumour in females was 0%. The chief clinical presentation of the tumour was epistaxis and nasal obstruction 80%. According to Chandler et al1[7] 1984 classification, the majority of the patients were in stage IV (48%). Majority of the patients (80%) were treated with surgery. 20% of the patients were treated with radiotherapy.

Table-I. Age distribution of nasopharyngeal angiofibroma (n=50)

Age in yrs	No of patients	%age
0-10	-	-
11-20	50	100%
21-30	-	-
31-40	-	-
41-50	-	-

Table-II. sex distribution of nasopharyngeal angiofibroma (n=50)

Sex	No of patients	%age
Male	50	100%
Female	-	-

Table-III. Socio-economic status of patients with nasopharyngeal angiofibroma (n=50)

Class	No of patients	%age
Lower class	50	100%
Upper class	-	-

Table-IV. Geographic distribution of nasopharyngeal angiofibroma (n=50)

Distribution	No of patients	%age
Urban Area	20	40%
Rural Area	30	60%

The cure rate with surgery was 75%, failure rate (re-occurrence) 25% and mortality rate 0%. The common complication with surgery was secondary atrophic rhinitis (24%) and with radiotherapy was dryness of mouth and ulceration (8%).

Table-V. Clinical presentation of nasopharyngeal angiofibroma (n=50)

Clinical presentation	No of patients	%age
Epistaxis and nasal obstruction	40	80%
Nasal obstruction	10	20%

Table-VI. Hb. level in patients of nasopharyngeal angiofibroma (n=50)

Hb level	No of patients	%age
0-5 gm	-	-
6-10 gm	40	80%
11-15 gm	10	20%

Table -VII. Treatment plan for nasopharyngeal angiofibroma (n=50)

Treatment	No of patients	%age
Surgery	40	80%
Radiotherapy	10	20%

Table-VIII. Surgical approaches used for nasopharyngeal angiofibroma (n=40)

Surgical approach	No of patients	%age
Weber-Ferguson approach	24	60%
Lateral Rhinotomy approach	12	30%
Trans-palatal approach	4	10%

The incidence of anaemia (Hb below 10 gm) in patients with nasopharyngeal angiofibroma was 76%. In 60% of the patients the tumour was resected by Weber-Ferguson approach.

Table-IX. Staging of patients with nasopharyngeal angiofibroma (n=50)[17]

Stage	No of patients	%age
I	4	8%
II	12	24%
III	24	48%
IV	10	20%

Table-X. Treatment complications of nasopharyngeal angiofibroma (n=50)

Complications	No of patients	%age
Palatal fistulae	2	4%
Secondary atrophic rhinitis	12	24%
Nasal crusting	20	40%
Cheek numbness	12	24%
Dryness of mouth and ulceration	4	8%

The majority of the patients were from rural areas (60%). All the patients were belonging to the lower socio-economic class (100%). The mortality rate was 0%.

Table -XI. Staging Systems used for nasopharyngeal angiofibroma
Table-A

Stage-I	Tumour confined to nasopharynx and / or nasal fossa
Stage-II	Tumour extending into spheniod sinus and/or pterygomaxillary fossa
Stage-III	Tumour beyond stage II limits extending into one or more of the following structures maxillary sinus, ethmoid , orbit, infra temporal fossa, cheek and palate.
Stage-IV	Tumour with intra-cranial extension.

Table- B	
Type I	Tumour limited to the nasopharyngeal and nasal cavity bone destruction negligible or limited to the spheno-palatine foramen.
Type II	Tumour invading the pterygo palatine fossa or the maxillary ethmoid or sphenoid sinus with bone destruction.
Type III-A	Tumour invading the infra-temporal fossa or orbital region with out intracranial involvement
Type III-B	Tumour invading the infra temporal fossa or orbit with intra-cranial extra dural (parasellar) involvement
Type IV-A	Intracranial intradural tumour without infiltration of the cavernous sinus, pituitary fossa or optic chiasm.
Type IV-B	Intracranial intradural tumour with infiltration of the cavernous sinus , pituitary fossa or optic chiasm

Table- C	
I A	Tumour limited to posterior nares or nasopharynx vault
I B	Extension into one or more paranasal sinuses
II A	Minimal lateral extension through spheno palatine foramen into medial pterygo maxillary fossa
II B	Full occupation of pterygo maxillary fossa displacing posterior wall of antrum forward superior extension eroding orbital bones
II C	Extension through pterygo maxillary fossa into cheek and temporal fossa.
III	Intracranial extension

Table- D	
Stage I	Tumour limited to nasopharynx choana nasal cavity
Stage II-A	Superior spread into ethmoids with or without proptosis due to lateral displacement of lamina papyracea sphenoidal involvement
Stage II-B	Extensive lateral spread into pterygo palatine fossa infra temporal fossa, cheek.
Stage III	Simultaneous superior and lateral spread (II-A + II-B)
Stage IV	Intracranial extension

DISCUSSION

According to the study carried out by Witt et al (1984 USA) they received only 31 cases in 30 years which means almost one patient per year but in our study the number of cases appears to be almost 12.5 cases per year which is almost twelve times more than that studied by above mentioned author. This comparison shows that the incidence of the nasopharyngeal angiofibroma is much higher in our country as compared to USA and also documented by the study of the Bhatia et al in 1967 in which 92 cases of nasopharyngeal angiofibroma were reported in 27 years in India (Lucknow) which shows almost 3 cases per year. It means that the incidence in our region is four times that of India but the cause of this is unknown.

Witt et al in 1983, declared that during 30 years study of cases of nasopharyngeal angiofibroma all the patients were male between the age of 11 – 20 years. In our study the range of age group is same and also all the patients were male. This shows that the age and sex incidence in both Asia and Europe is same but the number of patients are much higher in Asia.

Majority of the patients were from rural areas and were belonging to lower socio-economic class. The best therapeutic modality available for the treatment of

nasopharyngeal angiofibroma is surgery and it is proved by our study. The role of radiotherapy is only palliative and is used when the tumour is unresectable mostly due to intracranial extension.

CONCLUSION

Our study shows that the nasopharyngeal angiofibroma is not very uncommon in our region so it needs considerable concentration to avoid any mismanagement of patients especially at early stage. it also shows that the only effective treatment modality available for nasopharyngeal angiofibroma is surgery and results are good if the tumour is completely excised but recurrence will occur if the excision is incomplete. The role of radiotherapy is only palliative. It is still to be discovered why the tumour is so common in poor socio-economic group and more so in western Punjab and northern Sindh.

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