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FREQUENCY OF NASOPHARYNGEAL ANGIOFIBROMA IN PATIENTS PRESENTING WITH RECURRENT EPISTAXIS

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Abstract:

Objective: *To determine the frequency of nasopharyngeal angiofibroma in patients presenting with recurrent epistaxis.*

Study design*: Cross sectional study.*

Duration and setting*: This study was carried out from July 2017 to July 2018 at ENT, Head & Neck Surgery department, Khyber teaching hospital, Peshawar.*

Material and method: *A total number of 93 patients were included in this study. Patients fulfilling the inclusion criteria were collected from the outdoor patient department (OPD) of ENT, head and neck surgery, Khyber teaching hospital, Peshawar. Informed consent for participating in the study was taken from all patients. The patients' biodata along with hospital registration number were entered on proforma. The patients were assessed initially by history and nasal endoscopic. CT scan nose and PNS with contrast was done and patient admitted and operated for the suspected nasopharyngeal angiofibroma. Biopsy specimen was sent for histopathology to consultant histopathologist in the hospital's pathology laboratory. Lab reports of the biopsy specimen showing histopathology of nasopharyngeal angiofibroma were reviewed and data entered in the proforma.*

Results: *Out of 93 patients, 32% patients were in age range 10-15 years, 68% patients were in age range 16-20 years. Mean age was 16 years with SD ± 1.26. Fifty seven percent patients had duration of symptoms <1 year while 43% patients had duration of symptoms > 1 year. The incidence of nasopharyngeal angiofibroma was 18%.* ***Conclusion:*** *Our study concludes that the incidence of nasopharyngeal angiofibroma in our setup is 18% which can be due to the increasing number of Afghan refugees.*

Key words: *nasopharyngeal angiofibroma, recurrent epistaxis.*

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INTRODUCTION:

Nasopharyngeal Angiofibroma (also known as juvenile nasopharyngeal angiofibroma; JNA) is a benign fibrovascular tumor that occurs in the nasopharynx of prepubertal and adolescent males but locally aggressive neoplasm that exhibiting a strong tendency to bleed. [1,2] Hippocrates described the tumor in 5th century BC and Chauveau first used the term angiofibroma in 1906. [3] The incidence of JNA is 0.05 - 0.5% of all head and neck tumors in US with wide geographical variation, India being highe. [4,5,6,7] Pathologically, it is characterized by haphazardly arranged vascular channels surrounded by dense fibrous tissue. The smaller vessels in the central portion of the lesion typically lack muscular elastic laminae which contribute to the capacity for massive bleeding. Although angiofibroma is histologically benign, it may act in an aggressive fashion characterized by recurrences that may extend into and destroy the adjacent bony structures. The extent of growth is studied clinically and radiologically by contrast enhanced computerized tomography (CT) scans and staged accordingly. [8,9]

The most common presenting symptoms are painless nasal obstruction, repeated nasal bleeding, and a nasal or nasopharyngeal mass with nonspecific symptoms of rhinorrhea, anosmia, and headache. Facial deformity, protrusion of eyes, exophthalmos, visual disturbance, cranial nerve paralysis, and neurologic deficits suggest advanced disease. [4,10,11]

The diagnosis of Nasopharyngeal Angiofibroma is essentially based on a careful history and nasal endoscopic examination, supplemented by imaging studies using computed tomogram (CT) and Magnetic Resonance Imaging (MRI). MRI is more accurate than CT in assessing intracranial extension. Preoperative Biopsies to establish histological diagnosis are contraindicated for fear of massive lethal bleeding and definitive diagnosis is established by angiography which also serves as therapy since embolization of the tumor feeding vessels may be performed at the same sitting. Preoperative embolization minimizes intraoperative blood loss. It can be safely performed without neurological complications. Angiography is helpful in delineating internal carotid system supply and can help guide surgical planning. [12,13,14]

The management of Nasopharyngeal Angiofibroma presents a challenge to ENT surgeons. Preoperative angiography and embolization minimize intraoperative blood loss and the current shift in the treatment to endoscopic excision in selected lesions reduces perioperative morbidity. Progress in skull base anatomy, instrumentation, cameras, and surgical strategy allows for expansion of the indications for endoscopic removal of Nasopharyngeal Angiofibroma. This approach may have a better outcome in terms of blood loss, hospital stay, and local sequelae. Still, an external approach should be considered only for selected cases due to massive intracranial extension or optic nerve or internal carotid artery entrapment by the tumor. An efficient strategy in the management of extensive Nasopharyngeal Angiofibroma is the use of a multimodality approach, in which surgical resection is followed by the treatment with radiosurgery in critical locations. These therapeutic schemes are safe and offer long-term tumor control….12. [15,16,17] For selected tumors with limited infratemporal fossa invasion and skull base erosion, the endoscopic approach may also be indicated. It is a safe and effective treatment modality due to the lack of external scars, minimal bone resection and blood loss and low recurrence rate….1. [19,20,21].

The purpose of the study is to determine the frequency of Nasopharyngeal Angiofibroma in male patients presenting with recurrent and profuse epistaxis because epistaxis is a very common problem and a number of patients present with profuse and recurrent epistaxis. Knowing that angiofibroma if diagnosed early and treated promptly, gives good results in terms of eradicating the problem, minimizing risks of recurrence and avoiding complications. If missed in such patients, angiofibroma can lead to serious complications and even death.

MATERIAL AND METHOD:

A total number of 93 patients were included in this cross sectional study with Convenience non probability sampling from July 2017 to July 2018. Patients fulfilling the inclusion criteria were collected from the outdoor patient department of ENT, head and neck surgery, Khyber teaching hospital, Peshawar. Only Male patients having age 10-20 years with recurrent epistaxis were included in the study, while patients Previously diagnosed or recurrent cases of Nasopharyngeal Angiofibroma. And Patients with clinical suspicion of Sino nasal Polyposis were excluded from study. Informed consent for participating in the study was taken from all patients. The patients' biodata along with hospital registration number were entered on proforma. The patients were assessed initially by history and nasal endoscopic examination. CT scan nose and PNS with contrast was done and patient admitted and operated for the suspected

nasopharyngeal angiofibroma. Biopsy specimen was sent for histopathology to consultant histopathologist in the hospital's pathology laboratory. Reports of the biopsy specimen showing histopathology of nasopharyngeal angiofibroma were reviewed and data entered in the proforma.

Operational definitions:
Recurrent Epistaxis:
The patients, who were present with at least 03 bouts of nasal bleed within 01 month, (at least 15 drops of blood in each bout) were considered as recurrent epistaxis.

Nasopharyngeal Angiofibroma:
It was mean any visible mass in the nasal cavity (seen through anterior rhinoscopy with kalian nasal speculum or nasal endoscopy) or in nasopharynx (hyperdense mass seen in nasopharynx with Contrast enhanced CT scan) in adolescent males.

Data analysis:
The data was stored and analyzed in SPSS version 17. Descriptive statistics like mean + standard deviation was calculated for quantitative variables (age and duration of symptoms). Frequency and percentages were calculated for categorical variable (Angiofibroma). Nasopharyngeal Angiofibroma were stratified among age and duration of symptoms to control effect modification. Post stratification was done through chi-square test. P value ≤ 0.05 was considered significant. All the results were represented as tables/charts.

RESULTS:

A total of 93 patients were observed to determine the frequency of nasopharyngeal angiofibroma in recurrent epistaxis and the results were analyzed as:

Age distribution among 93 patients was analyzed as 30 (32%) patients were in age range 10-15 years, 63(68%) patients were in age range 16-20 years. Mean age was 16 years with SD ± 1.26. (as shown in Table No 1). Duration of symptoms among 93 patients was analyzed as 53(57%) patients had duration of symptoms < 1 year while 40(43%) patients had duration of symptoms > 1 year. (as shown in table No 2). Nasopharyngeal angiofibroma among 93 patients was analyzed as 17(18%) patients had nasopharyngeal angiofibroma while 76(82%) patients didn't had nasopharyngeal angiofibroma. (as shown in table No 3). Stratification of frequency of nasopharyngeal angiofibroma with age and duration of symptoms is given in table no 4,5

Table No. 1 Age Distribution (n=93)

Age	Frequency	Percentage
10-15 years	30	32%
16-20 years	63	68%
Total	**93**	**100%**

Mean age was 16 years with SD ± 1.26

Table No. 2 Duration of symptoms (n=93)

Duration of symptoms	Frequency	Percentage
< 1 year	53	57%
>1 year	40	43%
Total	**93**	**100%**

Table No. 3 Nasopharyngeal angiofibroma (n=93)

Nasopharyngeal angiofibroma	Frequency	Percentage
Present	17	18%
Absent	76	82%
Total	**93**	**100%**

Table No. 4 Stratification Of Nasopharyngeal Aangiofibroma with Age (n=93)

Nasopharyngeal angiofibroma	10-15 years	16-20 years	Total
Present	5	12	17
Absent	25	51	76
Total	30	63	93

Chi Square test was applied in which P value was 0.002

Table No. 5. Stratification of Nasopharyngeal Angiofibroma with Duration of Symptoms (n=93)

Nasopharyngeal angiofibroma	< 1 year	>1 year	Total
Present	10	7	17
Absent	43	33	76
Total	53	40	93

Chi Square test was applied in which P value was 0.003

DISCUSSION:

Juvenile nasopharyngeal Angiofibroma (JNA) is a lobulated, firm non-capsulated tumour with numerous attachment and multiple feeding vessels. Diagnosis is relied upon clinical and radiological findings where as the ultimate histopathological diagnosis comes from surgical specimen. Recurrent epistaxis and bleeding during surgery is hazardous at time. Pre-operative super selective embolization has made the dissection feasible for surgeons. Surgery is considered the mainstay of all available treatment modality in this tumor.

Our study shows that 32% patients were in age range 10-15 years, 68% patients were in age range 16-20 years. Mean age was 16 years with SD ± 1.26. Fifty seven percent patients had duration of symptoms <1 year while 43% patients had duration of symptoms > 1 year. More over in our study the incidence of nasopharyngeal angiofibroma was 18% patients in which 7(40%) patients were Afghan refugees. Similar results were observed in other studies as:

Shahabi I et al [22] the region wise incidence of Angiofibroma in a study of 20 cases was ranging from 10-40% with maximum incidence in afghan refugees as 40%.In study conducted by Ghias K et al, the incidence of Nasopharyngeal Angiofibroma is ambiguous; some studies estimate it to be 0.5%, whereas others claim it to be even rarer, having an incidence of 0.05% of all tumors of the head and neck region. The incidence of JNA in South Asia appears to be greater than in the West.[23] Though in Pakistan the exact incidence is not known, patients mainly present from the rural areas of Sindh and Baluchistan. More over for stage I and II tumors, the current practice and standard of care is the use of trans nasal endoscopic surgery. In their review, the early staged tumors were treated by open procedures, primarily because of lack of surgical expertise. These were essentially treated by General Otolaryngologists with limited experience and training in endoscopic Sino nasal techniques. [24]

Extensive tumors tend to present at a younger age. This may be attributed to the increased frequency of epistaxis, culminating in earlier consultation. While a study describes greater degree of maturation and small number of blood vessels supplying large JNAs. [23] Shamim AA et al study revealed expansion in

blood supply when the tumor became advanced. In their study, the percentage of tumors supplied bilaterally increased from 25% to 100% as the stage of the tumor progressed from I to IV. All patients were embolized pre-operatively, comparable to literature. [24]

Reported recurrence rates following treatment of JNA varies between 0 and 55%. [25] The 10.5% (2/19) recurrence rate in the present study is less than the rate of 17% (7/42) reported earlier. [26] However, in the earlier study, if only the group of patients treated via conventional surgery is taken into account, the recurrence rate was 23% (7/30) as all recurrences resulted from traditional approaches and none endoscopically. Others reported a rate of residual tumor of 13.5% (5/37) which is comparable to the 15.8% (3/19). [27]

CONCLUSION:

Our study concludes that the incidence of nasopharyngeal angiofibroma in our setup is 18% which can be due to the increasing number of Afghan refugees.

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