ORIGINAL ARTICLE

Histopathological Analysis of Sinonasal Polyps Observed in Akhtar Saeed Medical College

ATIKA MASOOD[1]*, AAFRINISH AMANAT[2], ALIA WAHEED[3], *MALEEHA ASLAM[4], AMJAD NAEEM[5], ABDULLAH FAROOQ KHAN[6]*

ABSTRACT

Aim: To determine the frequency of nasal polyps observed in Akhtar Saeed Medical College, Lahore.
Methods: This study comprised of 79 consecutive casesreceived with the clinical diagnosis of nasal polyps during the span of 5 years. The study was done after approval from IRB. The specimens were received in the histopathology section of the dept. of Pathology, Akhtar Saeed Medical and Dental College, Lahore. The samples were processed, tissue sections were made and stained. After staining, reporting of the slides was done.
Study design: Descriptive study of retrospective type.
Results: There were 73(92.4%) cases of non- neoplastic and 6 cases of neoplastic type, of which 5 were benign and 1 was malignant.
Conclusion: It is difficult clinically to differentiate between different histological varieties of nasal polyps. Therefore, it is suggested that all the polypoidal masses of the nasal cavity should be studied histopathologically.
Keywords: Nasal polyp, Pakistan, Reticulin

INTRODUCTION

The nasal cavity and paranasal sinuses function as a unit and are affected by many pathological processes, inflammatory polyposis being the most common one. The prevalence of inflammatory polps is 4% in the general population. The frequency of malignant tumors of nasal cavity and paranasal sinuses is 0.2 to 0.8% among all the carcinomas[1].The most common site of origin is in the ethmoidal labyrinth particularly from the mucosa of middle turbinate. The most frequent age of occurrence of nasal polyps is middle aged males[2].
The clinical presentation, signs and symptoms of all the sinonasal masses are same. i.e. nasal obstruction, epistaxis, rhinorrhoea[3].

Polypoidal masses in the nasal cavity form a multifaceted group of lesions with varied histopathologic features. The most common lesions are non-neoplastic ones. Two types are mainly encountered, i.e., one is associated with allergy and on histology eosinophilic infiltration of the stroma is seen[1]. While the other variety is associated with chronic naso-sinusoidal infection and are termed the inflammatory or granulamatous polyps[1].
It is impossible to differentiate clinically between such lesions and it is necessary that all the polypoidal masses should be fully examined histopathologically.

In this article we have analyzed the histopathologic patterns of the polypoidal masses in nasal cavity and sinuses observed during 05 years in AkhtarSaeed Medical and Dental College, Lahore.

MATERIAL AND METHODS

This study comprised of 79 consecutive cases which were received in the histopathology section of the dept. of Pathology of Akhtar Saeed Medical and Dental College, Lahore. The samples were collected during the span of 5 years from May 2012 to May 2017. This study was done after being approved by the IRB. All the specimens which had been clinically diagnosed as nasal polyps during the five years were included in this study.

The samples which were inadequate or not properly labeled before sending to the lab were excluded from the study. The data of the patients regarding age, gender, mode of presentation and clinical findingsof the patients was collected. The tissues samples were routinely processed and sections of 5-6 micrometer thickness were made. After this, the sections were stained by Haematoxylin and Eosin stain. Special staining by using reticulin and PAS stains wasdone where fungal infection was suspected. The slides were then examined under the microscope and diagnosis was made. The cases were classified into non-neoplastic and neoplastic lesions[4]. The neoplastic lesions were further classified into benign and malignant ones. The data was analyzed by using SPSS version 16. Frequencies and percentages were computed for the categorical variables like age, gender and types of nasal polyps using frequencies.

RESULTS

This study revealed that there were 73(92.4%) cases of non- neoplastic and 6 cases (7.59%) of neoplastic type. Among the 6 neoplastic lesions (7.59%), 5 cases were benignand 1 case was malignant. In our study, females (52.05%) were found to be slightly more affected than the males and the average age was 32.12 years.There were 35 males (47.94%) and 38 females (52.05%) and the age range of the patients was from 10 to 82 years with average of 32.12 years.

Our study results revealed that allergic nasal polyps were the commonest type encountered. i.e., 45 cases (61.6%). These polyps revealed abundant eosinophils in the stroma in addition to the other inflammatory cells.

[1,2,3]Associate professor, Pathology, ASMDC, UHS, Lahore
[4]Professor, Pathology, ASMDC, UHS, Lahore
[5]Professor, Pathology, ASMDC, UHS, Lahore
[6]Assistant Professor Orthopaedic, Akhtar Saeed Medical & Dental, College, Lahore
Correspondence TO Dr. Atika Masood, Email: dratika@hotmail.com Cell:0323-4624000

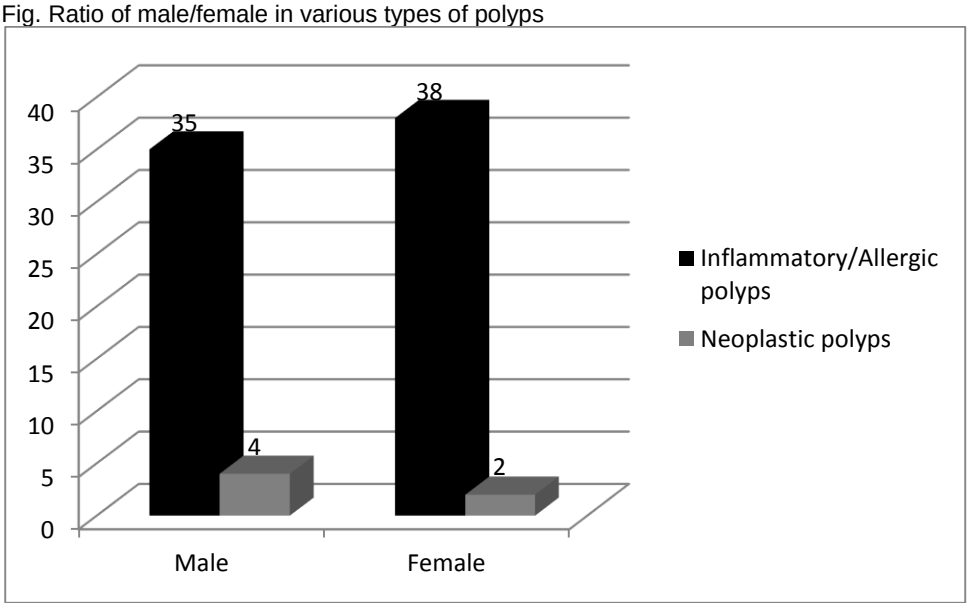
There were 21 cases (28.76%) of inflammatory nasal polyps in which there was paucity of eosinophils. Otherwise the typical features of oedomatousstroma with pseudocyst formation and infiltration by lymphocytes plasma cells, histiocytes were present in both the types.
Fungal etiology was seen in five cases,while one case each of infected benign cyst and chronic granulomatous inflammation were also noted.

Among the 6 cases of neoplastic lesions, there were 5 benign (83.3%) and 1 malignant (16.66%). Angiofibroma (33.33%) and inverted nasal papilloma (33.33%) were the most common lesions observed in the benign group.One case (16.66%) of haemangioma was also seen.In malignant variety only one case (16.66%) of moderately differentiated squamous cell carcinoma was seen. There were 4 males (66.6%) and 2 females (33.33%) and the age range of the patients was from 17 to 60 years with average of 38 years.

Table 1: Frequency of nasal polyps (n=79)

Neoplastic lesions (n=6)	**Frequency**	**Non neoplastic lesions (n=73)**	**Frequency**
Angiofibroma	33.3 %	1. Allergic nasal polyp	61.6 %
Inverted papilloma	33.3 %	2. Inflamed nasal polyp	28.76%
Hemangioma	16.66 %	3. Fungal nasal polyp	6.85 %
Moderately differentiated squamous cell carcinoma	16.66 %	4. Chronic Granulomatous nasal polyp	1.37 %
		5. Infected benign cyst	1.37 %

Fig. Ratio of male/female in various types of polyps



DISCUSSION

The mean age of presentation in a study carried by Brist et al was 39 and male to female ratio was 1.8: 1[3].In most of the studies, males were affected more as compared to females[4,5].In another study, mean age of presentation was found to be 22 years[5].

In our study, we have observed 73 cases (92.4%) of nasal polyps of which 45 cases (61.6 %) were of allergic type and 21 cases (28.76%) were of inflammatory type.Dafale et al found the frequency of simple polyps to be 88.5% and neoplastic polyps to be 11.42%in his study[2].

Kim SJ et alcompared eosinophil count in nasal polyps over a certain period of time by making two groups. He found that the eosinophil count was raised in the group which included samples from 2010-2011 as compared to the group which included samples from 1993-1994. This shows that there has been a significant increase in the prevalence of eosinophilic polyps in the recent years[6].

The frequency of fungal infection in our study came out to be 6.8%. Another study by Ahmad R et al in Karachi found a high fequency of involvement of fungus in nasal polyps[7]. Jawad A determined that for better management of nasal polyps, it is necessary to determine the frequency of fungal infection[8].
Angiofibroma and inverted nasal papilloma were the commonest benign neoplasm observed in the present study (33.3%) and hemangiomawas seen in 16.66% of cases.

In a study by Kumari K et al, majority of the cases of nasopharngeal malignancies were found to be undifferentiated carcinomas and remaining cases were of Squamous cell carcinoma, adenocarcinoma and non-Hodgkin Lymphoma[9].

Lathi A et al and Knudson S et al carried out studies in India and Denmark respectively and concluded that the most common malignancy encountered in sinonasal area is Squamous cell carcinoma[10].

We can infer from this study that histological examination of the nasal polyps is necessary for better management. Another study carried out by Khadim MT in Multan found the same that the histopathological examination of the polypoidal masses of nasal cavity is necessary to diagnose benign and malignant lesions[11]. However, a study carried out by Yaman H et al concluded that if clinically suspicious signs are not present, then the histopathological analysis of nasal polyps may not be necessary[12].

CONCLUSION

It is evident from our study that the polypoidal masses in the nasopharynx range from inflammatory/allergic to benign and malignant neoplasms and affects all the age groups. Moreover, the malignant lesions can be seen though less in frequency.

Acknowledgments: The authors are thankful to the laboratory staff of Histopathology section of ASMDC for participating in this study. Moreover, all the consultants are appreciated for their contribution and devotion in the reporting individually and in the committee.

Conflict of Interest: None declared.

REFERENCES

1. Raj JA, Sharmila PS, Shrivastava M, Mahantachar V, Rajaram T. Morphological spectrum of lesions in the sinonasal region. Journal of evolution of medical and dental sciences. 2013 Sep 16;2(37):7175-86
2. Dafale SR, Yenni VV, Bannur HB, Malur PR, Hundgund BR, Patil SY. Histopathological study of polypoidal lesions of the nasal cavity-A cross sectional study. Al Ameen J Med Sci. 2012;5(4):403-6.
3. Bist SS, Varshney S, Baunthiyal V, Bhagat S, Kusum: Clinico‑pathological profile of sinonasalmasses.National Journal of Maxillofacial Surgery | Vol 3 | Issue 2 | Jul-Dec 2012)
4. Somani S, Kamble P, Khadkear S. Mischievous presentation of nasal masses in rural areas. Asian J Ear Nose Throat 2004;2:9‑17., Khan N, Zafar U, Afroz N, Ahmad SS, Hasan SA. Masses of nasal cavity, paranasal sinuses and nasopharynx: A clinicopathological study. Indian J Otolaryngol Head Neck Surg 2006;58:259‑63.
5. Patel SV, Katakwar BP. Clincopathological study of benign and malignant lesions of nasal cavity, paranasal sinuses and nasopharynx: A prospective study. Orissa J Otolaryngol Head Neck Surg 2009;3:11‑5.)
6. Kim SJ, Lee KH, Kim SW, Cho JS, Park YK, Shin SY. Changes in histological features of nasal polyps in a Korean population over a 17-year period. Otolaryngology--Head and Neck Surgery. 2013 Sep;149(3):431-7.
7. Ahmed R, Durrani MA, Sohail Z, Chang AH, Fakharuddin, Kalar M, Ahmed SS.Frequency of Fungal Involvement in Nasal Polyposis. Pak J Med Health Sci Apr - Jun 2012;6(2):454-8.
8. Jawad A, Nisar YB.Frequency of fungal infection in the nasal polyposis patients undergoing polypectomy in a tertiary care unit. Rawal Med J Oct - Dec 2015;40(4):428-32.
9. KalpanaKumari M.K. and Mahadeva K.C. et al., Polypoidal Lesions in the Nasal Cavity.Journal of Clinical and Diagnostic Research. 2013 June Vol-7(6): 1040-1042
10. Lathi A, Syed MMA, Kalakoti P, Qutub D, Kishve SP. Clinico-pathological profile of sinonasal masses: a study from a tertiary care hospital of India. *ActaOtorhinolaryngol Ital*. 2011;31(6):372–77.
11. Khadim MT, Ahmed S, Akhtar F, Jaffar SA, Mirza IA, Anwar J, Tahir H.Clinicopathological Characteristics of Nasal Polyps with Chronic Sinusitis.J BahriaUni Med Dental Coll Jul - Sep 2016;6(3):178-81.
12. Yaman H, Alkan N, Yilmaz S, Koc S, Belada A. Is routine histopathological analysis of nasal polyposis specimens necessary?European Archives of Oto-laryngology.2011;268(7):1013-1015.