

Frequency of Nasal Polyps among Patients Reporting to the ENT OPD of A Tertiary Care Hospital in Lahore

Alina Amer,¹ Laiba Wahid,² Ayub Ahmad Khan,³ Rana Sajawal Joiya,⁴ Minahil Tariq,⁵ Tulha Amir⁶

Abstract

Objective: To investigate the frequency of nasal polyps in our population, examining their distribution based on age and gender. Additionally, we seek to assess the frequency of recurrent cases that have undergone surgical intervention, histological variations and associated comorbidities.

Material and Methods: Data from 60 patients, diagnosed with nasal polyps between July 2022 and July 2023, were collected from the Hospital Management System (HMS) of Combined Military Hospital Lahore in this retrospective observational study. Demographic details, diagnosis, type of nasal polyp, comorbidities and recurrence information were recorded. Statistical analyses, including Chi-square tests, were performed using SPSS 26.

Results: The study reveals a frequency of 6.6%, with a male predominance (76.7%). The majority of patients were aged 31-45 years, and antrochoanal polyps were more prevalent (81.67%) than ethmoidal/bilateral polyps (18.33%). Polyps were mostly associated with asthma and allergy. FESS was performed in all patients, with a recurrence rate of 6.67% within one year, showing equal recurrence in both genders.

Conclusion: This study contributes valuable insights into the frequency and recurrence of nasal polyps in a specific population. Despite a predominantly male occurrence and a higher prevalence of antrochoanal polyps, the recurrence rate is relatively low. Many comorbidities were observed in patients such as allergy, asthma, hypertension and diabetes. Further investigations into associated symptoms and the effectiveness of medical treatments are recommended.

Keywords: Age, Antrochoanal polyps, Ethmoidal/Bilateral Polyps, Gender, Nasal Polyps, Recurrence.

How to cite: Amer A, Wahid L, Khan AA, Joiya RS, Tariq M, Amir T. Frequency of Nasal Polyps among Patients Reporting to the ENT OPD of A Tertiary Care Hospital in Lahore. *Esculapio - JSIMS* 2025;21(01): 145-150

DOI: <https://doi.org/10.51273/esc25.251321126>

Introduction

One of the causes of patients presenting in ENT OPD with sino-nasal masses include nasal polyps (antrochoanal and ethmoidal types).¹ Nasal polyps are soft, painless, teardrop shaped, non-cancerous and edematous masses arising from the nasal or sinus mucosa, affecting either one or both

parts of the nasal openings.² They are seen by anterior and posterior rhinoscopy on examination or nasal endoscopy. No certain genetic or environmental cause of nasal polyps is known till date however, its correlation is observed with various respiratory disorders such as allergy, asthma, aspirin sensitivity, cystic fibrosis and other inflammatory conditions.^{1,3} Definitive symptom of nasal polyps is nasal obstruction leading to breathing difficulties but varies according to the site and size of the polyp such as nasal discharge and anosmia.² Nowadays 22-item Sino-Nasal Outcome Test (SNOT-22) is being used to evaluate the severity of disease and its impact on a patient's life so that it can be treated promptly.⁴

1,2,4-6. CMH Lahore Medical College & IOD, Lahore.

3. Department of ENT, CMH Lahore Medical College & IOD, Lahore.

Correspondence:

Alina Amer, Final Year Medical Student, CMH Lahore Medical College & IOD, Lahore. Email: alinaamerr09@gmail.com

Submission Date: 13-10-2024
1st Revision Date: 19-02-2025
Acceptance Date: 12-03-2025

Nasal polyps can be treated by both medical and surgical intervention. Medical treatment includes steroid drops and sprays, systemic steroids which are also used pre and post operatively, leukotriene receptor antagonists and antihistamines.^{1,5} Functional Endoscopic Sinus Surgery is most commonly practised to remove nasal polyps these days in patients who do not respond to medical therapy.⁵ Its aim is to ameliorate the drainage and ventilation of nasal cavities and relieve nasal obstruction.⁶ However, many times these polyps recur even after this procedure. Recurrence is more common in asthmatic individuals or patients having other comorbidities such as cystic fibrosis and most of these patients undergo a revision surgery.

According to an Indian author, its prevalence in the general population is 4%, most commonly occurring in males and in patients who belonged to the age group of 41-60 years.^{1,7,8} It is unlikely to occur in patients who are over 80 years or under 10 years of age unless any other medical condition is diagnosed in them.⁸ More cases of bilateral/ethmoidal polyps were observed than the unilateral/antrochoanal polyps in various studies conducted in the past.

As stated in a research conducted by DeConde et al, 116 out of 244 i.e 48% of patients had polyp recurrence after Functional Endoscopic Sinus Surgery, 23% of whom got treated through medical therapy. It is mentioned in another research that more than 50% of the cases had nasal polyp recurrence after Functional Endoscopic Sinus Surgery of which 30% had undergone revision surgery.⁹ However, according to some researches Functional Endoscopic Sinus Surgery proved to be an effective treatment option in 85% of the cases with a decreased SNOT-22 score.^{4,10,11}

The rationale of this study is to know the frequency, age and gender wise distribution of nasal polyps in our population, histopathological variations, associated comorbidities and the number of operated recurrent cases as not many studies have been conducted in this regard in our region and to come up with new operative techniques if recurrence is high.

Material and Methods

This is a retrospective observational study, diagnosed

with nasal polyps between July 2022 and July 2023, were collected from the Hospital Management System (HMS) of Combined Military Hospital Lahore. Approval to conduct this study was taken from the ethical review CMH/LMC (Ref no. 617/ERC/CMH/LMC, Date of Approval: 20-07-2023). Data were collected from the Hospital Management System (HMS) and since there was no patient interaction, informed consent was not required. All the patients who were referred to the operation theatre from Out Patient Department between 1st July 2022 and 31st July 2023 were identified irrespective of their age and gender. Recurrence was noted if any patient reported to the department again for the surgical removal of nasal polyp during the same year. Diagnosis was confirmed by nasal endoscopy and CT Scan PNS through axial, coronal and sagittal views. Their demographic details, diagnosis, type of nasal polyp, histopathological variations, associated comorbidities and recurrence were recorded in standard data collection forms. After checking the data for its entirety and correctness, it was entered in Statistical Package for Social Sciences version 26 (SPSS 26) and was analysed using this software. Chi-square test was used to analyse the variations in proportion and the value of $p < 0.05$ was considered statistically significant.

Results

The study presents the results of 60 patients who presented to the otorhinolaryngology department of Combined Military Hospital, Lahore with nasal polyps during the time period of 1st July 2022 to 31st July 2023. Majority of the patients were males with few females with male to female ratio being 3.2:1. It was most prevalent among the age group of 31-45 years followed by 16-30 years, 46-60 years, 61-75 years and lastly <15 years with the mean age being 39.87 ± 14.56 (**Table-I**). Antrchoanal/unilateral polyps were observed to be more in number than the ethmoidal/bilateral polyps (Table II). After removing the nasal polyps through FESS they were sent for histopathological evaluation. 48 (80%) polyps among the total cases were non-neoplastic while 12 (20%) cases reported to be neoplastic. Among the non-neoplastic cases 31 (64.5%) were allergic nasal polyps showing abundant eosinophils in stoma.

Remaining 17 (35.4%) were inflammatory polyps in which very few eosinophils were observed. Of the associated comorbidities allergy was the most common with 16 (26.6%) patients having allergic symptoms. Asthma was observed in 11(18.3%) patients. 5 (8.3%) patients were diabetic and 3 (5%) were hypertensive. There was no association with aspirin sensitivity or cystic fibrosis in our study. All of the patients underwent Functional Endoscopic Sinus Surgery and recurrence occurred in 1/15th of the patients within the span of one year and the recurrence rate was equal in both males and females (Table II).

Table 1: Demographics.

Characteristics	Responses	N	%
Gender	Male	46	76.70%
	Female	14	23.30%
	<15	1	1.70%
Age group of participant (years)	16-30	18	30.00%
	31-45	21	35.00%
	46-60	15	25.00%
	61-75	5	8.30%

Discussion

A significant feature of the face, the nose is linked to a person's pride and dignity. It has thoughtful aesthetic, practical, sentimental, and cultural worth. In a study conducted in Lady Reading Hospital, Peshawar by Afridi et al, 63 patients were diagnosed and treated with nasal polyps during 2009-2011, which is less compared to our study. According to international records the prevalence is 2.5-2.6% in South Korea, 1.1% in the USA, and 4% in India.^{1,12,13} There is a male predominance in our study i.e; 76.7% of the calculated frequency. Many studies conducted in previous years also show male predominance such as the one conducted by Irshad-ul-Haq et al in Sheikh Zayed Hospital, Rahim Yar Khan documented 67% of male prevalence.¹⁴ Similarly, 61% in Karachi and 60% in Peshawar was noted.¹⁵ Another research conducted in Combined Military Hospital Peshawar and Quetta reported 61.25% of male patients with these polyps. Same pattern was observed in many international studies as stated by Rajeev et al in an Indian study i.e; 64.8%¹, Rasouli et al and Chen et al.¹⁶ Male dominance could be a result of a genetic predisposition for males to develop certain diseases, a reflection of a male-dominated society where males are subjected to a variety of environmental stressors

Table 2:
Types of Nasal polyps and Recurrence

Characteristics		Gender		Total	Chi-Square	P-value	
		Male	Female				
Types of nasal polyps	Antrochoanal polyp	n	35	14	49	4.099	0.043*
		% within Types of nasal polyps	71.40%	28.60%	100.00%		
		% within Gender	76.10%	100.00%	81.70%		
	Ethmoidal polyp	n	11	0	11		
		% within Types of nasal polyps	100.00%	0.00%	100.00%		
		% within Gender	23.90%	0.00%	18.30%		
Recurrence of nasal polyps after FESS	No	n	44	12	56	1.704	0.192
		% within Recurrence of nasal polyps after FESS	78.60%	21.40%	100.00%		
		% within Gender	95.70%	85.70%	93.30%		
	Yes	n	2	2	4		
		% within Recurrence of nasal polyps after FESS	50.00%	50.00%	100.00%		
		% within Gender	4.30%	14.30%	6.70%		
Total		n	46	14	60		
		% within Recurrence of nasal polyps after FESS	76.70%	23.30%	100.00%		
		% within Gender	100.00%	100.00%	100.00%		

Table 3: Age Wise Distribution of types of Nasal Polyps

Characteristics		Age group of participant					Total	Chi-Square	P-value
		<15	16-30	31-45	46-60	61-75			
Types of nasal polyps	N	1	16	16	12	4	49	1.309	0.86
	Antrochoanal polyp								
	% for Types of nasal polyps	2.00%	32.70%	32.70%	24.50%	8.20%	100.00%		
	% within age group of participant	100.00%	88.90%	76.20%	80.00%	80.00%	81.70%		
	N	0	2	5	3	1	11		
	Ethmoidal polyp								
	% within Types of nasal polyps	0.00%	18.20%	45.50%	27.30%	9.10%	100.00%		
	% within age group of participant	0.00%	11.10%	23.80%	20.00%	20.00%	18.30%		
	N	1	18	21	15	5	60		
Total	% within Types of nasal polyps	1.70%	30.00%	35.00%	25.00%	8.30%	100.00%		
	% within age group of participant	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		

while trying to support their families, or a result of a higher rate of male hospitalization overall. However, some studies contradicted this ratio such as the one conducted by Abdelnaseer et al in India which stated a slight female predominance with 55% of females and 45% of males having this disease.⁵ In a review by Settupane in 1977, there was almost an equal distribution of nasal polyps between males and females i.e; 50.2% and 49.8% respectively.⁷

Majority of the patients in our study were in the age range of 31-45 years and the mean age was 39.87 ± 14.56 . Rasouli et al reported a nearly similar mean age of 38.87 ± 14.74 years.⁸ In Irshad ul Haq's et al study the mean age was 31.56 ± 6.18 years and the majority of patients belonged to the age range of 21-30 years.¹⁴ Afridi et al reported a mean age of 33.5 years. Almost similar mean age was reported in the study conducted by Akhtar et al in Agha Khan University Hospital, Karachi and Bhutta et al.¹⁷ Moreover, a study conducted in Combined Military Hospital Kharian reported a mean age of 37.9 in males and 36.7 in females. In the Indian research by Abdelnaseer et al, the mean age of patients was 35.47 ± 13 years and ranged from 14 to 64 with median 40 years and the one by Rajeev et al had patients in the age range of 41-60 years.^{1,5} A lower mean age was observed in a study by Hassan et al i.e; 26.13 ± 2.5 years with the majority of patients lying in the age range of 26-30 years.

More patients are diagnosed with antrochoanal

/unilateral polyps in our research than ethmoidal /bilateral polyps i.e; 81.67% and 18.33% respectively. This is contrary to many national and international studies such as the one conducted in the Military Hospital of Peshawar which reported bilateral nasal polyps in all subjects. Another one in Peshawar also documented more bilateral polyps. The greater prevalence of non-neoplastic type of nasal polyps coincides with many studies such as the one conducted by Abdelnaseer et al.⁵ Another study that took place at a tertiary care hospital in Nagpur also reported a greater percentage of non-neoplastic polyps. Among the non-neoplastic polyps allergic nasal polyps were more common in our study, a finding consistent with observations from several other studies, including the one conducted by Abdulla et al.¹⁸

Additionally, we searched for related comorbidities such as aspirin sensitivity, asthma, allergies, diabetes, hypertension, and cystic fibrosis. The most prevalent ones were asthma and allergies. Another study conducted in the Italian Society of Allergy, Asthma and Clinical Immunology (SIAAIC) found a strong correlation between nasal polyps and asthma and allergic rhinitis.¹⁹ The mucosa may thicken and become inflamed as a result of ongoing exposure to allergens. In their study, Abdal Naseer et al. also found a 35% correlation with asthma.⁵

6.67% of patients in our research had recurrent nasal

polyps irrespective of gender which is marginally close to Afridi et al's study which had 13% of recurrence. The study conducted in Liaquat University Hospital Hyderabad and Civil Hospital Karachi resulted in 33% of recurrent cases which were also irrespective of gender. Akhtar et al documented a recurrence of 33% that too with no association with sex.²⁰ Another international study has reported a recurrence of 48% of which 23% were treated with medicinal treatment.

Some limitations of our research include no record of symptoms with which the patients presented, no documentation of associated fungal infections. This study is conducted in a single hospital of Lahore, that is why we cannot apply the results to the whole population of the city. Since our study included all the patients who were referred to the Operation Theatre for Functional Endoscopic Sinus Surgery, no study on the patients who were treated medically in the Out Patient Department was made. Recurrence of nasal polyps in our study is low. This low ratio may be due to patients not preferring the same hospital for their treatment or getting treated in the Out Patient Department. More studies should be done in multiple institutes with greater sample size to get more standardised results, to see variations in prevalence and recurrence if any and the most common symptom noted in these patients.

Conclusion

Although nasal polyps is a condition having an unknown cause, it is associated with various comorbidities such as allergies and other inflammatory conditions. In our study the frequency is relatively high as compared to other observational studies that took place nationally and internationally, being more prevalent in males than females and the mean age of its occurrence is 39.87 ± 14.56 . Antrchoanal type is more common in our area than the ethmoidal type of polyps and recurrence rate is relatively less. The allergic type of non-neoplastic polyps is the most frequently observed. More study on the symptoms and efficacy of medical treatment should be done.

Conflict of interest None

Funding Source None

References

1. Rajeev L, Ibrahim L, Muhsina AM, Kumar M, Merin Babu UD. Study of Nasal Polyps in a Tertiary Care Hospital. Age (Years). 2020;17(10):8.<https://doi.org/10.26452/ijrps.v11iSPL4.4581>
2. Toppila-Salmi S, Lyly A, Simin J, Aakko J, Olsen HH, Lehtimäki L. Predictors of revision endoscopic sinus surgery in Finnish patients with chronic rhinosinusitis with nasal polyps. Clinical and Translational Allergy. 2025 Feb;15(2):e70032.<https://doi.org/10.1002/clt2.70032>
3. Deosthale N, Patil P, Khadakkar S, Garikapati P, Dhote K, Dhoke P, Harkare V, Deshmukh A. A Clinicopathological Profile of Sino-nasal Masses at a Tertiary Care Hospital: A Descriptive Study. Bengal Journal of Otolaryngology and Head Neck Surgery. 2021 Sep 27;29(2):133-9. <https://doi.org/10.47210/bjohns.2021.v29i2.470>
4. Seccia V, D'Amato M, Scioscia G, Bagnasco D, Di Marco F, Fadda G, Menzella F, Pasquini E, Pelaia G, Tremante E, De Corso E. Management of patients with severe asthma and chronic rhinosinusitis with nasal polyps: a multidisciplinary shared approach. Journal of Personalized Medicine. 2022 Jul 1;12(7):1096. <https://doi.org/10.3390/jpm12071096>
5. Abdelnaseer U, El Sayed Salem A, Shawky BH, Yousef A. Assessment of Nasal Obstruction Symptoms and Pulmonary Function Following Functional Endoscopic Sinus Surgery (FESS) in Chronic Rhinosinusitis with Nasal Polyps. Indian Journal of Otolaryngology and Head & Neck Surgery. 2023 Jun 18;1-7. <https://doi.org/10.1007/s12070-023-03898-9>
6. Bonciu A, Almasan T, Cordunianu A, Necula V, Pelin S, Ganea G, Anghel I. Rhinologic Society. Romanian Journal of Rhinology. 2023 Oct;13(52). DOI: 10.2478/rjr-2023-0029
7. Anastasi F, Canevari FR, Gallo S, Gramellini G, Heffler E, La Mantia I, Monti G, Ragusa M, Macchi A. Olfactory impairment in Italian patients with chronic rhinosinusitis with nasal polyps: a patient-centered survey. Frontiers in Allergy. 2025 Jan 7;5:1519069.DOI 10.3389/falgy.2024.1519069

8. Rasouli AA, Dyamely Z. Prevalence of nasal polyps in chronic rhinosinusitis patients undergoing functional endoscopic sinus surgery. *Interdisciplinary Approaches to Medicine*. 2021 Jun 20;2(1):67-71. <https://doi.org/10.26577/IAM.2021.v2.i1.08>
9. Reh DD, Wang Y, Ramanathan M, Lane AP. Treatment-recalcitrant chronic rhinosinusitis with polyps is associated with altered epithelial cell expression of interleukin-33. *American journal of rhinology & allergy*. 2010 Mar;24(2):105-9. doi: 10.2500/ajra.2010.24.3446
10. Weissman B, Shen K, Flanagan OL, Chowdhury S, Sawires J. Comparing Medical and Surgical Management of Chronic Rhinosinusitis: A Systematic Review of Dupilumab and Endoscopic Sinus Surgery. *Cureus*. 2025 Feb 27;17(2). DOI: 10.7759/cureus.79742
11. Almarri FK, Algahtani S, Alokby G, Alanazi M, Alsaleh S. Practice patterns of biologics prescriptions and surgery in chronic rhinosinusitis with nasal polyps. *American Journal of Rhinology & Allergy*. 2025 Jan;39(1):49-57. DOI: 10.1177/19458924241287959
12. Won HK, Kim YC, Kang MG, Park HK, Lee SE, Kim MH, Yang MS, Chang YS, Cho SH, Song WJ. Age-related prevalence of chronic rhinosinusitis and nasal polyps and their relationships with asthma onset. *Annals of Allergy, Asthma & Immunology*. 2018 Apr 1;120(4):389-94. <https://doi.org/10.1016/j.anai.2018.02.005>
13. Palmer JN, Messina JC, Bilech R, Grosel K, Mahmoud RA. A cross-sectional, population-based survey of US adults with symptoms of chronic rhinosinusitis. In *Allergy & Asthma Proceedings* 2019 Jan 1 (Vol. 40, No. 1). DOI 10.2500/aap.2019.40.4182
14. Irshad-ul-Haq M, Farooq M, Qadri SH. Prevalence of allergic fungal sinusitis among patients with nasal polyps. *J Sheikh Zayed Med Coll*. 2014;5(4):690-2. <https://doi.org/10.53350/pjmhs211581820>
15. Musani A, Sajjad Q, Khan FA, Jawaid I, Iqbal H. Prevalence and risk factors of Fungal Nasal Polyposis in Tertiary Care Hospital. *The Professional Medical Journal*. 2020 Feb 10;27(02):289-92. DOI: 10.29309/TPMJ/2020.27.2.3522
16. Chen S, Zhou A, Emmanuel B, Thomas K, Guian H. Systematic literature review of the epidemiology and clinical burden of chronic rhinosinusitis with nasal polyposis. *Current Medical Research and Opinion*. 2020 Nov 1;36(11):1897-911. DOI: 10.1080/03007995.2020.1815682
17. Bhutta MF, Hussain A, Baig S, Shahid N, Iqbal N, Zafar U. Frequency of Fungal Nasal Polyposis and its Associated Risk Factors. *Pakistan Journal of Medical & Health Sciences*. 2022 May 13;16(04):283-
<https://doi.org/10.53350/pjmhs2216483>
18. Abdulla MS, Janardhan K, Lakshmi VP, John R. A Retrospective Study on Histomorphological Analysis of Sinonasal Polyps at A Tertiary Care Centre in A Rural Area of South India. *Int. J. Trop. Med*. 2024 May 2;18:83-9. doi: 10.59218/makijtm.2024.2.83.89
19. Nettis E, Brussino L, Patella V, Bonzano L, Detoraki A, Di Leo E, Sirufo MM, Caruso C, Lodi Rizzini F, Conte M, Yacoub MR. Effectiveness and safety of dupilumab in patients with chronic rhinosinusitis with nasal polyps and associated comorbidities: a multicentric prospective study in real life. *Clinical and Molecular Allergy*. 2022 May 19;20(1):6. <https://doi.org/10.1186/s12948-022-00171-2>

Authors Contribution

AA, AAK: Conceptualization of Project

AA, LW: Data Collection

AA, MT, RSJ: Literature Search

RSJ, MT: Statistical Analysis

LW, AAK, AA: Drafting, Revision

AA, TA: Writing of Manuscript