



THE EPIDEMIOLOGICAL AND CLINICAL ASPECTS OF NASAL POLYPOSIS' ASSOCIATION WITH ALLERGIC RESPIRATORY DISEASES

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ABSTRACT

Objective: The objective of this retrospective cross-sectional study was to obtain epidemiological data from the charts of 99 patients with nasal polyposis who reviewed AlMouasat University Hospital and to determine the frequency of the presenting symptoms of nasal polyps. Moreover, this research aimed to study the correlation between asthma with both allergic rhinitis and aspirin sensitivity.

Materials and Methods: This study was a retrospective study of the files of the patients who reviewed AlMouasat University Hospital and were diagnosed with nasal polyposis. This study included all cases from 1/1/2015 to 30/6/2018. Statistical analysis was done using SPSS 25.0.

Results: The most common age of presentation was 31 - 40 years old. Nasal polyposis was more common in females 56.6% compared to 43.4% males. Asthma was found in 27.3% of all patients with nasal polyposis. 37.4% of patients with nasal polyposis had allergic rhinitis. 13.1% had unilateral nasal polyposis. The most common complaint was nasal obstruction in 97% followed by anterior rhinorrhea in 85.9%.

Conclusion: This study highlights the need for large-scale epidemiologic research showing the prevalence and incidence of nasal polyposis in Syria.

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INTRODUCTION

Nasal polyps are mucosal lesions of the nasal or paranasal sinuses that can result from a response to inflammatory or infectious stimuli. They appear as smooth, round, semi-translucent masses that are most commonly found in the middle meatus and ethmoid sinuses and affect 1% to 4% of the population. Males are affected more than females and adults more than children. If it happens in childhood, mucociliary and immunodeficiency diseases must be ruled out, for example, patients with cystic fibrosis have a prevalence of nasal polyposis between 6% and 48% (1). Patients with nasal polyposis may present clinically with complaints of nasal obstruction, congestion, hyposmia, rhinorrhea, epistaxis, postnasal drip, headaches, and snoring. Nasal polyps more commonly appear bilaterally. In unilateral nasal masses, benign or malignant pathologies must be considered and distinguished by nasal endoscopy, CT scan, and biopsy (1).

The etiology of nasal polyps has been the subject of research for many years. Elevated levels of histamine and IgE found around polyps, and mast cells and eosinophilia found within polyps provide evidence suggesting that inflammation is a major factor in polyp formation (2).

Previous studies have also revealed a relationship between nasal polyposis, aspirin intolerance, and allergic rhinitis and asthma (4, 5). The prevalence of nasal polyposis is higher in subjects with asthma than in non-asthmatics and 16.5% of asthmatic patients over 40 years of age have been shown to have nasal polyps (3).

The management of nasal polyposis can be both medical and surgical. Topical corticosteroids are drug of choice as they reduce the size of the polyp and improve nasal breathing and prevent recurrence. In patients who do not respond to medical therapy or have large-sized polyps, functional endoscopic sinus surgery (FESS) is used to perform a polypectomy (4, 5). The objective of this study was to obtain clinical data from patients with nasal polyposis.

MATERIALS AND METHODS

This study was a retrospective study of the files of the patients who reviewed AlMouasat University Hospital and were diagnosed with nasal polyposis. We collected data regarding the age, gender, allergic rhinitis, aspirin sensitivity, asthma, location of the polyps, unilateral /bilateral polyps and symptoms of the patients.

This study included all cases from 1/1/2015 to 30/6/2018. Only the authors to ensure the privacy collected all the data and all the names and personal information were blinded. Statistical analysis was done using SPSS 25.0.

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RESULTS

Table 1: Variables of our study

	N	%	
Age	0 - 10	3	3.0
	11 - 20	12	12.1
	21 - 30	15	15.2
	31 - 40	27	27.3
	41 - 50	15	15.2
	51 - 60	13	13.1
	61 - 70	11	11.1
	71 - 80	3	3.0
	Gender	Male	43
Female		56	56.6
Aspirin sensitivity	Yes	18	18.2
	No	81	81.8
Allergic rhinitis	Yes	37	37.4
	No	62	62.6
Asthma	Yes	27	27.3
	No	72	72.7
Cystic Fibrosis	Yes	1	1
	No	98	99
Unilateral	Unilateral	13	13.1%
	Bilateral	86	86.9%

Table 2: Frequency of symptoms of nasal polyps in the patients

Symptoms	N of patients	%	
Nasal obstruction	Yes	96	97.0
	No	3	3.0
Hyposmia	Yes	66	66.7
	No	33	33.3
Headache	Yes	65	65.7
	No	34	34.3
Epistaxis	Yes	10	10.1
	No	89	89.9
Anterior rhinorrhea	Yes	85	85.9
	No	14	14.1
Posterior rhinorrhea	Yes	29	29.3
	No	70	70.7
Obstructive Sleep Apnea	Yes	2	2
	No	97	98

Table 3 Correlation between asthma and Aspirin Sensitivity, Allergic Rhinitis

		Asthma			
		Yes	No	Total	
Aspirin Sensitivity	Yes	Count	15	3	18
		% within Asthma	55.6%	4.2%	18.2%
Allergic Rhinitis	Yes	Count	8	11	19
		% within Allergic Rhinitis	42.1%	57.9%	100.0%

DISCUSSION

Nasal polyposis is a condition that more commonly affects middle-aged men (6). In a similar study (7), the peak age of presentation was in the second decade of life. In a Nigerian district hospital, Chukuezi reported that the maximum presentation rate was between 31 and 40 years old (8). In France, the estimated incidence of nasal polyposis increased with age, reaching a peak in the 50 to 59 year age group (9). In another study in France, the mean age of patients was 49.4 ± 17.6 (10). In our study, the most common age of presentation was 31 - 40 years old.

In a similar study, sex distribution of the patients with polyposis was 60% male and 40% female (11). Another study, (7) the prevalence was female (39.7%) and male (60.3%). In our study, nasal polyposis was more common in females 56.6% compared to 43.4% males.

In a similar study (7), 45.8 % had unilateral nasal polyposis and it was more common in comparison with other studies (1) which was 15.3%. In our study, 13.1% had unilateral nasal polyposis.

Patients with nasal polyposis often present with associated asthma. Asthmatic patients older than 40 years have a four times greater risk of suffering nasal polyposis than those under 40 years of age (3). In addition, Slavin and colleagues reported that patients with nasal polyposis present with more severe asthma than those without polyps (12). In a similar study, asthma was found in 10.4% of patients with nasal polyposis, in France it was (45%) and Spain (36.6%) (13, 14). In our study, asthma was found in 27.3% of all patients with nasal polyposis. In contrast to the association with asthma, it is rare for patients with allergic rhinitis to present with nasal polyposis (7). A similar study found that only 1.5% of patients with allergic rhinitis had nasal polyposis (4). Another study showed that the incidence of allergic rhinitis among patients with nasal polyposis was 18.2% in contrast to 47.9% in a study in Spain (14). In our study, 37.4% of patients with nasal polyposis had allergic rhinitis.

The most common complaint of patients with nasal polyposis is nasal obstruction. In a similar study (7), the most frequent symptoms were nasal obstruction (81.1%) and rhinorrhea (37.7%), followed by mouth breathing and snoring. Hyposmia, headache and facial pain were less common. Furthermore, 11.1% of patients had a history of epistaxis although it had the lowest incidence among other symptoms but it was still high when comparing other studies. Previous studies often did not mention this symptom, probably because of low incidence (14). In our study, the most common complaint was the same with nasal obstruction in 97% followed by anterior rhinorrhea in 85.9%, while posterior rhinorrhea was found in 29.3%. In contrast to similar studies (7), Hyposmia and headache were common in 66.7% and 65.7%, respectively. Regarding epistaxis, our results were similar to other studies (7) with epistaxis being the least common 10.1%. Furthermore, obstructive sleep apnea was found 2 patients.

Aspirin intolerance is around 5 to 6%. Up to 20% of asthmatic people are sensitive to aspirin (15). In our study, it was much higher 55.6% of patients with asthma had aspirin sensitivity. In our study, this was similar. 42.1% of patients with allergic rhinitis had associated asthma.

Nasal polyposis in children increases the suspect of cystic fibrosis (16). We had one patient with Cystic Fibrosis (1% of all sample) and this patient was under 10 years old. He was also diagnosed with asthma.

CONCLUSION

An overview of the currently available literature illustrates the paucity of accurate information on the epidemiology of nasal polyposis especially in Syria, and highlights the need for large-scale epidemiologic research exploring the prevalence and incidence of nasal polyposis and the associated factors (Asthma, Allergic Rhinitis, and Aspirin Sensitivity).

Compliance with Ethical Standards

Funding: This study was not funded by any institution. **Conflict of Interest:** The authors of this study have no conflict of interests regarding the publication of this article.

Ethical approval: The names and personal details of the participants were blinded to ensure privacy.

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