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THE CLINICAL MANIFESTATIONS IN PATIENTS WITH NASAL POLYPOSIS WHO UNDERWENT SURGERY IN DAMASCUS HOSPITAL

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ABSTRACT
The objective of this retrospective study was to obtain epidemiological data from 110 patients with nasal polyposis who underwent surgery (FESS) in Damascus hospital. Moreover, this research aims to study the correlation between nasal polyposis with asthma and aspirin intolerance. The frequency of clinical manifestations, previous medical history, and recurrence rate were determined and then compared with other studies. Nasal polyposis is slightly more common in males compared to females. The most common affected age category was [31-40] years. The most common complaint was nasal obstruction 98.2% followed by rhinorrhea 80.9% then anosmia 80%. Recurrence rate (patients who underwent corrective surgery after initial surgery) constituted 23.6% of patients. Patients with asthma constituted 30% of patients. Aspirin intolerance was found in 24.5%, and Samter's triad (nasal polyposis +asthma +aspirin intolerance) was found in 24.5%.

KEYWORDS: Nasal polyposis. Polyps. Asthma. Aspirin intolerance. Recurrence. Obstruction.

INTRODUCTION
Nasal polyps are soft, painless, noncancerous growths on the lining of the nasal passages or sinuses. They result from chronic inflammation and are associated with asthma, recurring infection, allergies, drug sensitivity or certain immune disorders. Small nasal polyps may not cause symptoms. Larger growths or groups of nasal polyps can block the nasal passages or lead to breathing problems, a lost sense of smell and frequent infections. Nasal polyps can affect anyone, but they're more common in adults. Medications can often shrink or eliminate nasal polyps, but surgery is sometimes needed to remove them. Even after successful treatment, nasal polyps often return.[1] Nasal polyps account for 5% of referrals to ENT clinics and 4% of referrals to allergy clinics. In other studies, the prevalence of nasal polyps was found to be between 1.3 and 5.6%. Davidson found the annual polyp incidence to be 0.43 per 1,000 persons. Nasal polyposis occurs in about 0.6% of adults, but it increases to 15% in patients suffering from bronchial asthma. Polyps are more common in male nonasthmatic, atopic patients, whereas in asthmatic patients there is no difference in prevalence between males and females. The initial aims of treatment are to relieve nasal blockage, rhinitis symptoms, asthma, and to improve sinus drainage, whereas the final target is to eliminate nasal polyps and sinus pathology and to prevent recurrences.[2]

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 response to medical therapy or have large-sized polyps, functional endoscopic sinus surgery (FESS) is used to perform a polypectomy.[3]

MATERIALS AND METHODS
This was a retrospective study of the records of patients who were admitted in the ENT department in Damascus Hospital, and were diagnosed with Nasal Polyposis and underwent surgery (polypectomy). We collected data regarding the age, gender, habits, symptoms, aspirin intolerance, asthma, and clinical examination of the patients.

This study included all cases from 1/1/2015 to 17/09/2018. Statistical analysis was done using SPSS 25.0.

RESULTS
Table 1: Nasal polyposis distribution by sex.

		N	%
Sex	Male	57	51.8
	Female	53	48.2
	total	110	100.0

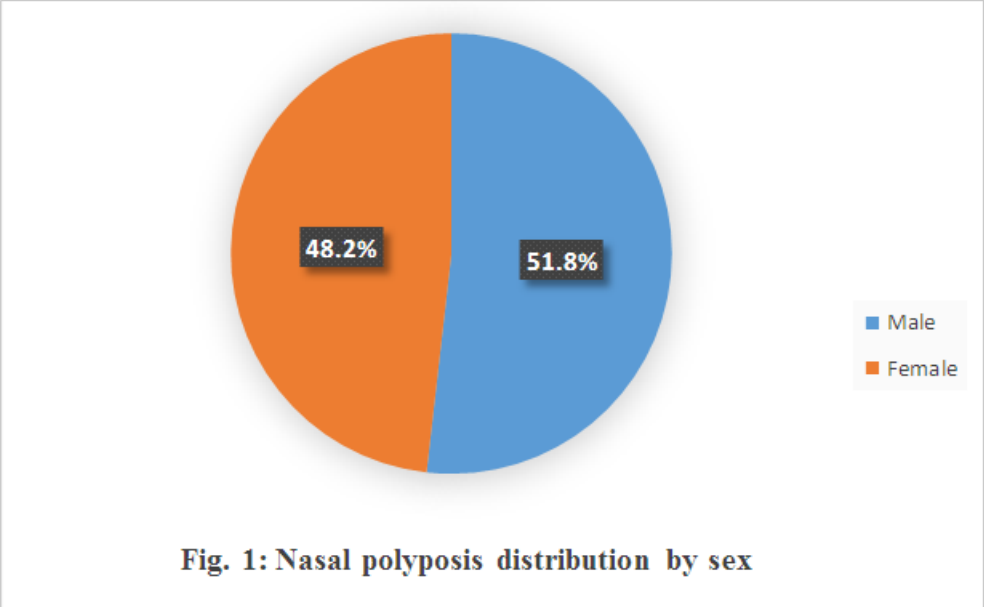

Fig. 1: Nasal polyposis distribution by sex

Table 1 and figure 1 show that nasal polyps affect males 51.8% slightly more than females 48.2%.

Table 2: Distribution of Nasal polyposis by age.

		N	%
Age Categories (by years)	[0-10]	4	3.6
	[11-20]	20	18.2
	[21-30]	16	14.5
	[31-40]	24	21.8
	[41-50]	19	17.3
	[51-60]	19	17.3
	[61-70]	6	5.5
	[71-80]	2	1.8
	Total	110	100.0

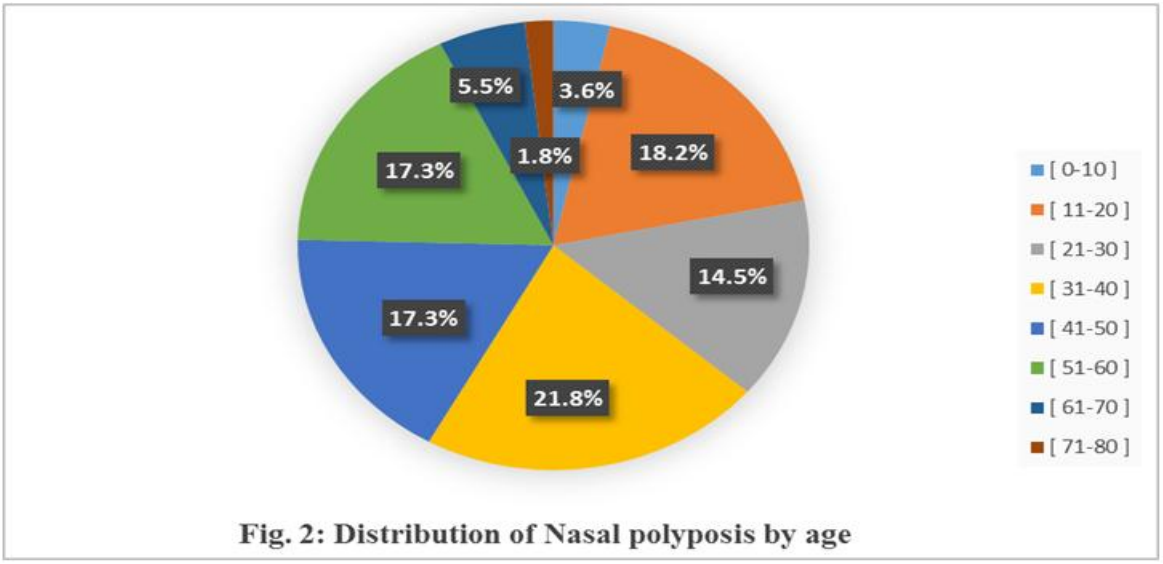

Fig. 2: Distribution of Nasal polyposis by age

Table 2 and figure 2 show that the most common affected age category is [31-40] years with 21.8%, followed by [11-20] years with 18.2%. The rest are as follows: [41-50] years with 17.3%. [51-60] with 17.3%. [21-30] with 14.5%. [61-70] with 5.5%. [0-10] with 3.6%. [71-80] with 1.8%.

Table 3: Habits of patients (smoking and alcohol).

		N	%
Habits	None	70	63.6
	Smoking	35	31.8
	Alcohol	5	4.5
	Total	110	100

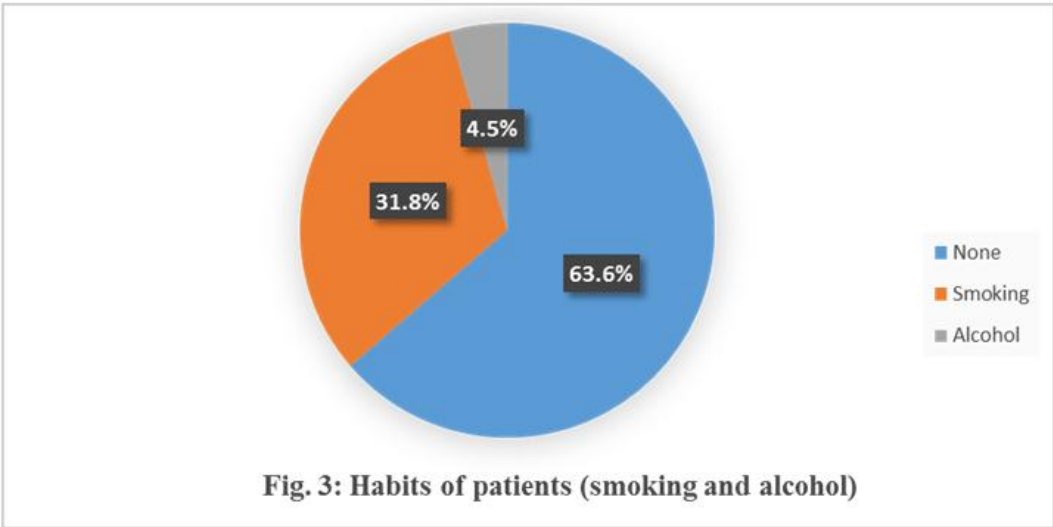

Fig. 3: Habits of patients (smoking and alcohol)

Table 3 and figure 3 show that smokers constitute 31.8% of patients, people who drink alcohol constitute 4.5%.

Table 4: Distribution of symptoms.

		N	%
Symptoms	Nasal obstruction	108	98.2
	Rhinorrhea	89	80.9
	Anosmia	88	80
	Allergic Symptoms (tearing and sneezing)	78	70.9
	Headache	67	60.9
	Post nasal drop	44	40
	Snoring	40	36.4
	Otologic symptoms	26	23.6
	Sleep Apnea	18	16.4
	Epistaxis	11	10

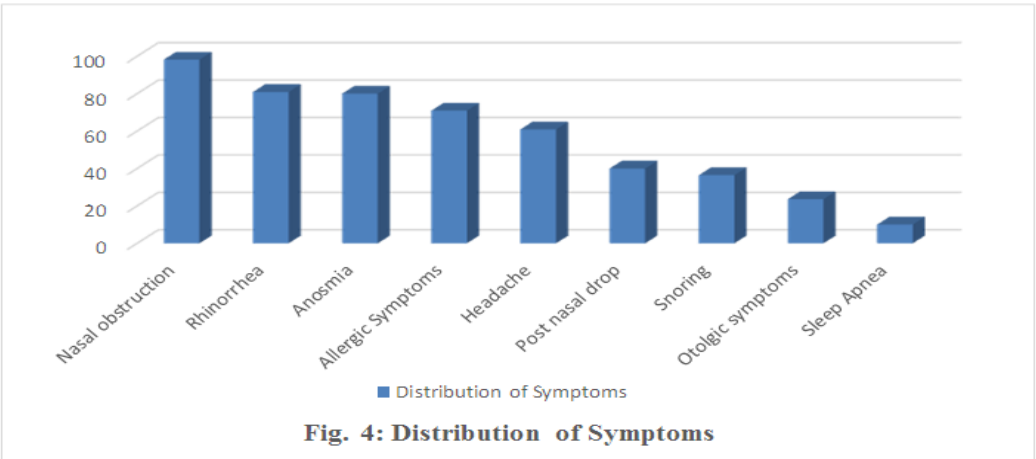

Fig. 4: Distribution of Symptoms

Table 4 and figure 4 show that the most common symptom in our research was nasal obstruction 98.2% followed by rhinorrhea 80.9% then anosmia 80%, tearing and sneezing were found in 70.9%, headache 60.9%,

postnasal drop 40%. Snoring 36.4%, otologic symptoms 23.6%, sleep apnea 16.4%, and epistaxis 10%.

Table 5: Nasal polyposis by duration of complaint.

		N	%
Duration of complaint (by years)	[0-5]	81	73.6
	[6-10]	25	22.7
	[11-15]	1	0.9
	[16- 20]	3	2.7
	Total	110	100.0

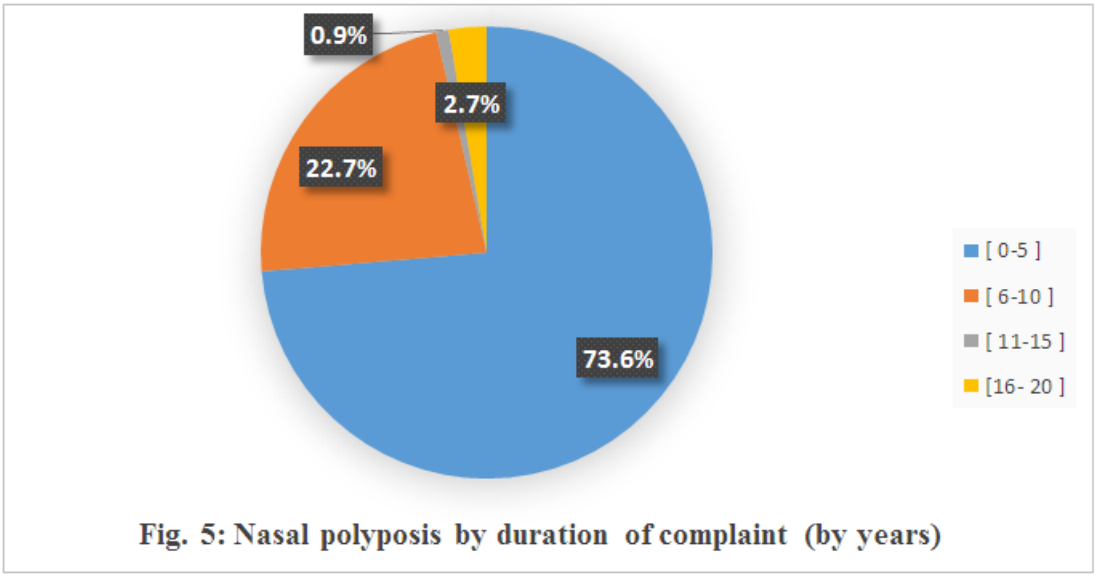

Fig. 5: Nasal polyposis by duration of complaint (by years)

Table 5 and figure 5 show that the most common duration of complaint was [0-5] years with 73.6%, followed by [6-10] years with 22.7%, and [16-20] years with 2.7%, and [11-15] with 0.9%.

Table 6: Asthma prevalence in patients with nasal polyposis.

		N	%
Asthma	Yes	33	30
	No	77	70
	Total	110	100

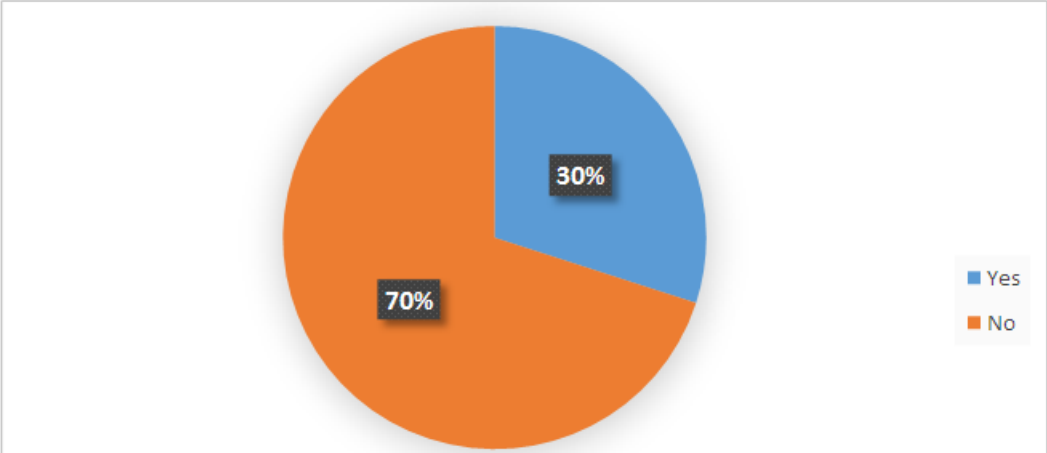

Fig. 6: Asthma prevelance in patients with nasal polyposis

Table 6 and figure 6 show that asthma was found in 30% of patients.

Table 7: Aspirin intolerance prevalence in patients with nasal polyposis.

		N	%
Aspirin intolerance	yes	83	75.5
	none	27	24.5
	Total	110	100

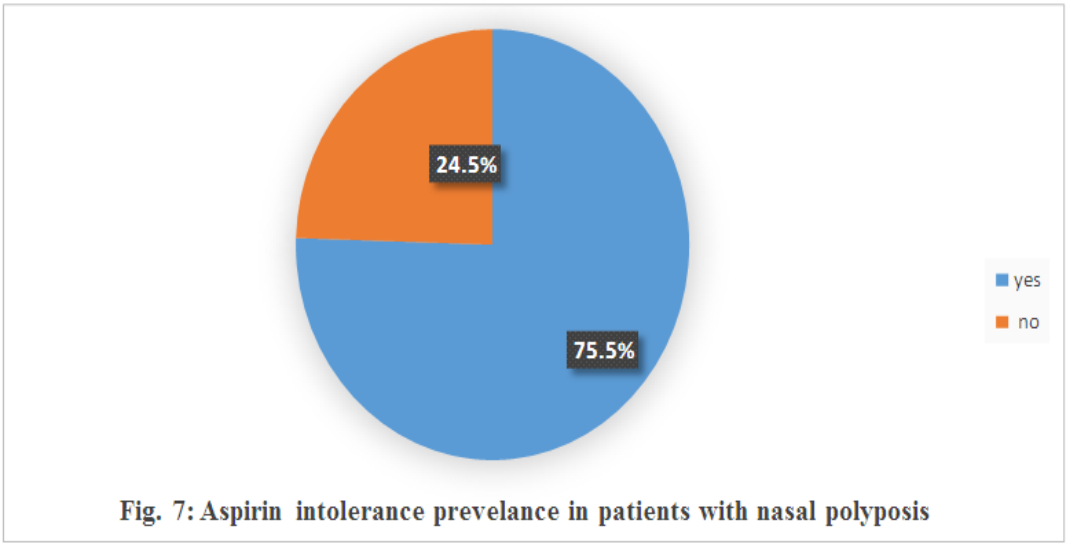

Fig. 7: Aspirin intolerance prevelance in patients with nasal polyposis

Table 7 and figure 7 show that aspirin intolerance was found in 24.5%.

Table 8: Nasal polyposis and Samter's triad (nasal polyposis + asthma + aspirin intolerance).

		N	%
Samter's triad	No	83	75.5
	Yes	27	24.5
	Total	110	100.0

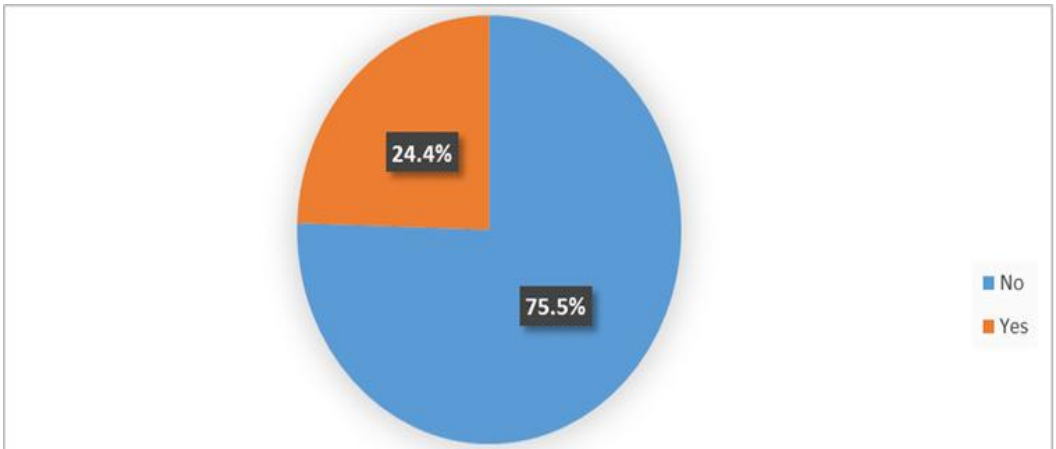

Fig. 8: Samter's triad in patients with nasal polyposis

Table 8 and figure 8 show that Samter's triad was found in 24.5% of patients.

Table 9: Nasal Polyposis and prevalence of Diabetes mellitus.

		N	%
D.M	Yes	9	8.2
	No	101	91.8
	Total	110	100.0

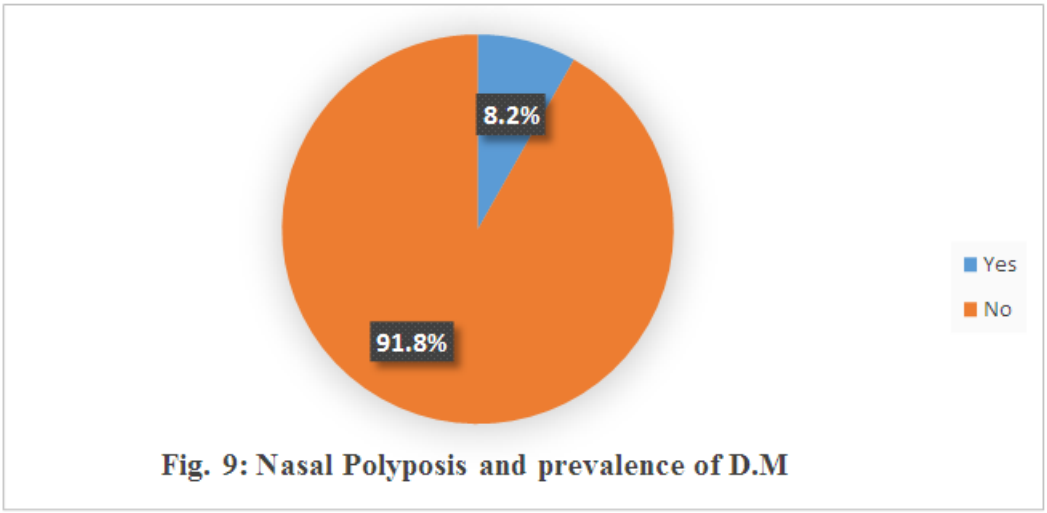

Fig. 9: Nasal Polyposis and prevalence of D.M

Table 9 and figure 9 show that Diabetes mellitus was found in 8.2% of patients.

Table 10: Nasal Polyposis and prevalence of Hypertension.

		N	%
Hypertension	Yes	15	13.6
	No	95	86.4
	Total	110	100

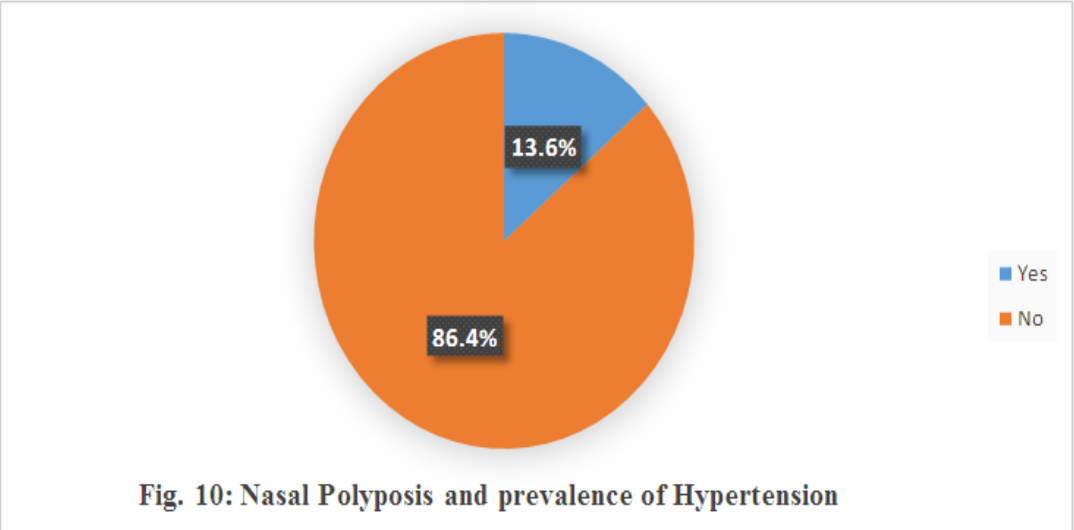

Fig. 10: Nasal Polyposis and prevalence of Hypertension

Table 10 and Figure 10 show that hypertension was found in 13.6% of patients.

Table 11: The Presence of previous medical treatment by Steroids.

		N	%
Previous medical treatment by Steroids	No	48	43.6
	Yes	62	56.4
	Total	110	100

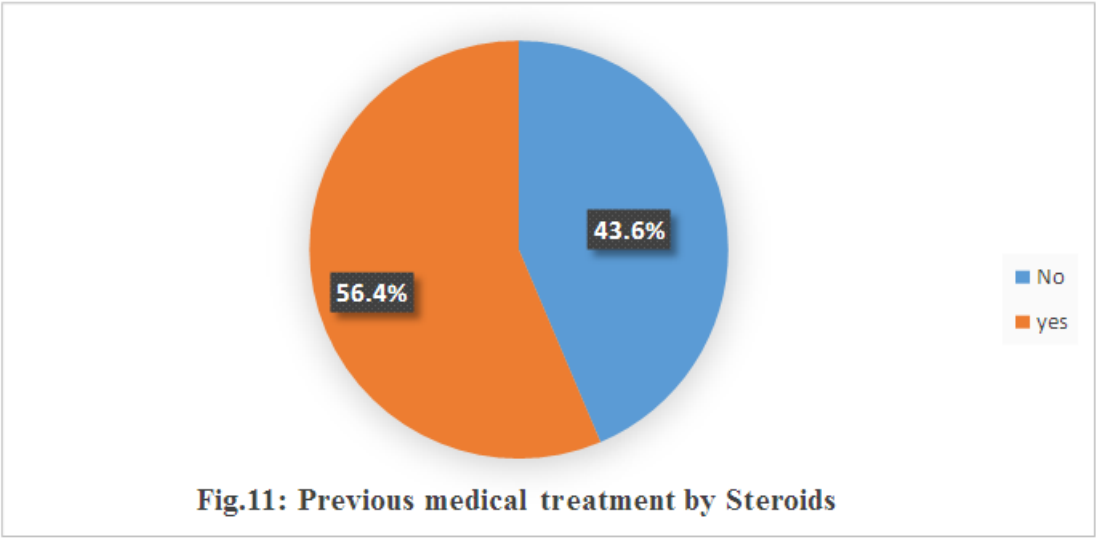

Fig.11: Previous medical treatment by Steroids

Table 11 and figure 11 show that patients who were treated medically constituted 56.4% of patients.

Table 12: Presence of previous surgical treatment (Polypectomy).

		N	%
Previous Polypectomy	No	84	76.4
	Yes	26	23.6
	Total	110	100

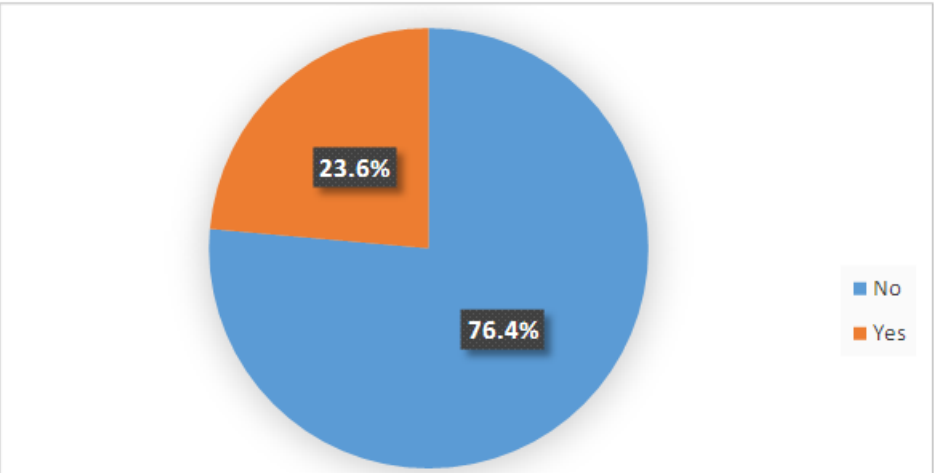

Fig. 12: presence of previous (Polypectomy)

Table 12 and figure 12 show patients who underwent previous surgical treatment (polypectomy) constituted 23.6% of patients.

Table 13: Prevalence of Nasal Polyps by clinical examination.

		N	%
Prevalence of Nasal Polyps by clinical examination	No	3	2.7
	Right Nostril	9	8.2
	Left Nostril	11	10.0
	Bilateral	87	79.1
	Total	110	100

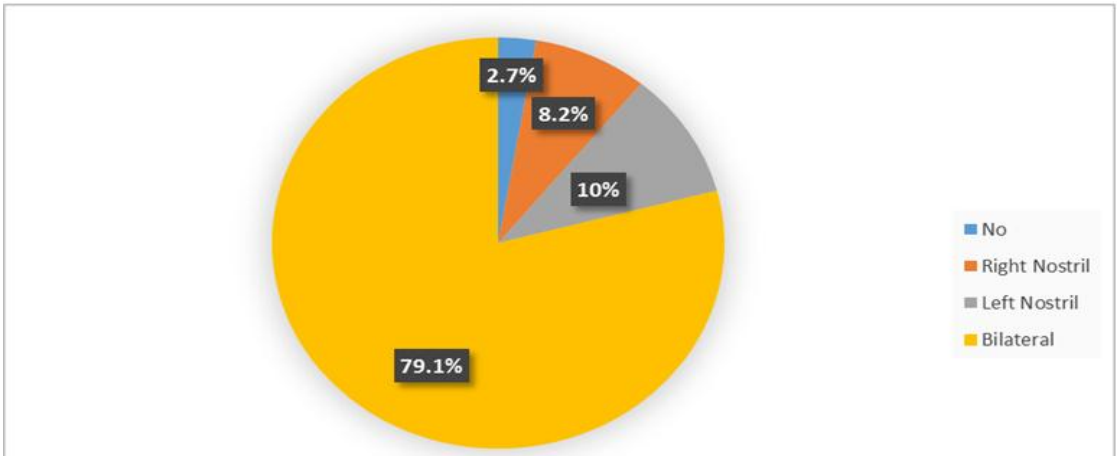

Fig. 13: Prevalence of Nasal Polyps by clinical examination

Table 13 and figure 13 show that 79.1% of patients had bilateral nasal polyps in the nasal cavity by clinical examination, 8.2% had polyps only on the right side, and 10% had them in the left side.

Table 14: Nasal septum deviation in patients with nasal polyposis.

		N	%
Nasal septum deviation	No	49	44.5
	To the right	34	30.9
	To the left	25	22.7
	Bilateral	2	1.8
	Total	110	100

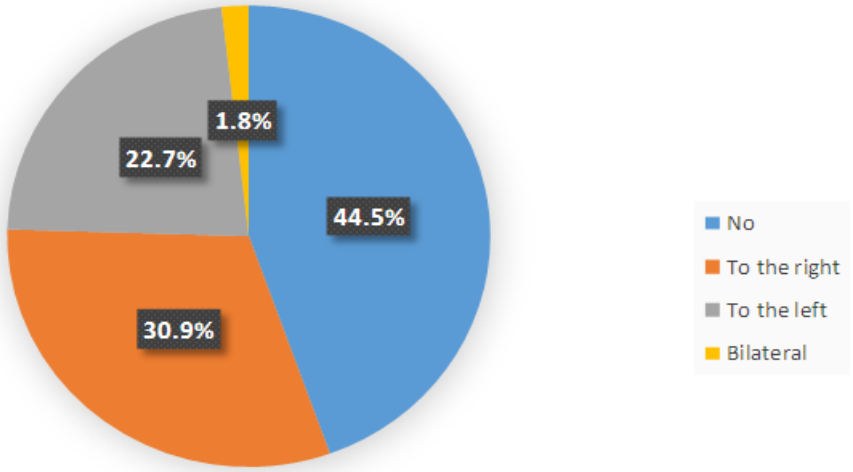

Fig. 14: Nasal septum deviation in patients with nasal polyposis

Table 14 and figure 14 show that 30.9% had septum deviation to the right, 22.7% had deviation to the left. 1.8% had bilateral septum deviation.

Table 15: Presence of turbinate hypertrophy by clinical examination.

Turbinate hypertrophy	No	38	34.5
	Right nostril	3	2.7
	Left nostril	7	6.4
	Bilateral	62	56.4
	Total	110	100

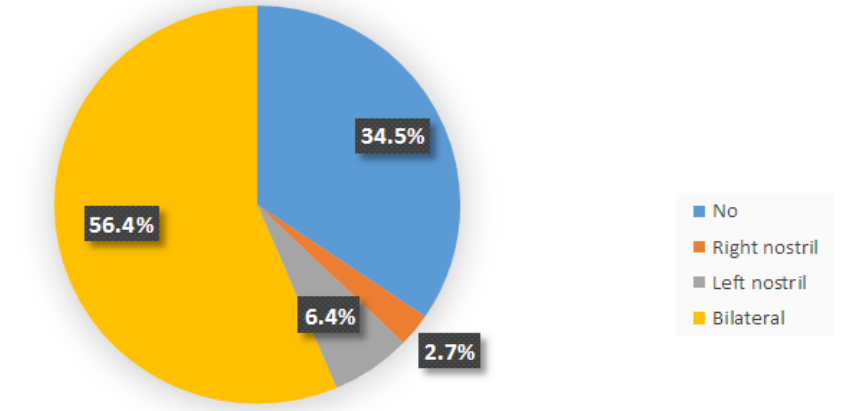

Fig. 15: Presence of turbinate hypertrophy in patients with nasal polyposis

Table 15 and figure 15 show that 56.4% had bilateral turbinate hypertrophy, 6.4% had turbinate hypertrophy only in the left side, and 2.7% had turbinate hypertrophy in the right side.

DISCUSSION

A study done by (Meymane Jahromi A and Shahabi Pour A)[3] found that nasal polyposis affects males 60.3% more than females 39.7%, while our study showed that males are affected in 51.8% and females 48.2%.

In another study by (Toledano Muñoz and co-authors)[4], it was found that polyps affect 63% of males and females 37%.

A study by (Louei Nahas and co-authors)[5] found that females 56.6% are affected more than males 43.3%. (Kennedy Dw and Lanza DE)[6] found that polyps are more common in middle aged men.

The most common affected age category in our study was 31-40 and it was the same in a study done by (chukuezi)[7], (klossek and co-authors)[8] and by (Louei Nahas and co-authors).[5]

It was found in our study that 30% of patients have asthma, while in a study by (Toledano Muñoz and co-authors)[4], the percentage of affected patients was 36.3%. In a study of by (Meymane Jahromi A and Shahabi Pour A)[3] it was 10.4%, and in another study[9] it was 50%.

It was reported by (louei nahas and co-authors)[5] that 27.3% of patients have asthma.

Whilst (Rugina M & co-authors)[10] found that the prevalence of asthma in nasal polyposis patients was 45%.

The most common symptom in our research was nasal obstruction 98.2% followed by rhinorrhea 80.9% then anosmia 80%, while in a study by (Toledano Muñoz A & co-authors)[4] nasal obstruction was the most common symptom 88% followed by anosmia 78% and rhinorrhea 66%. In (Sprekelsen)[11] research, nasal obstruction was the most common symptom 98% followed by rhinorrhea 90% and anosmia 72%.

There are previously published studies that did not address epistaxis probably because of low incidence rate, In a study by (Meymane Jahromi A, Shahabi Pour A)[3] they found epistaxis in 11.1% of patients, whereas in our study the percentage was 10%, but in (Bousquet J)[12] and (Louei Nahas & Co-authors)[5] studies, epistaxis was mentioned and according to the statistical results of our research, we found that our results are very close to the results of these studies, which were 10.1% and 11.1%, respectively.

In a study by (Toledano Muñoz A, Herráiz Puchol C)[4] otologic symptoms were positive in 42% of patients, whereas in (Jahromi A, Shahabi Pour A)[3] study otologic symptoms were positive in only 5.1% of patients. In our study we found that otologic symptoms were positive in 23.6% of patients.

In our study, the percentage of relapsing patients (those patients who needed corrective surgery after initial surgery) was 23.6%. In (Wynn R, Har-El G)[9] study, the relapse rate was 60%, and 47% were advised to perform corrective surgery, but only 27% performed surgery, which is close to our study. While in the study by (Veloso-Teles R and Cerejeira R)[13], the recurrence rate was 30% and only 7% of patients required surgery again.

In a study by (DeConde AS and co-authors)[14], the rate of relapse after 6 months of surgery was 35%. After 12 months it was 38%, and after 18 months it was 40%.

In our study, we found that 24.5% of nasal polyposis patients were allergic to aspirin. While in the study (Esmaeilzedeh H)[15], they conducted an Oral aspirin challenge (OAC) test for all nasal polyposis patients and their sensitivity to aspirin was 43.79%.

In our study, Samter's triad prevalence was 23.7%, while in study by (Kim JE, Kountakis SE)[16] the prevalence was 4.8%. In a study by (Schapowal AG)[17], it was found that 14.68% of patients had Samter's triad. (Stevens WW and Co-authors)[18] found that the percentage of Samter's in their patients was 16%, and these percentages are close to our study.

CONCLUSION

Nasal polyposis is slightly more common in males compared to females. The most common affected age category was [31-40] years. The most common complaint was nasal obstruction 98.2% followed by rhinorrhea 80.9% then anosmia 80%. Recurrence rate (patients who underwent corrective surgery after initial surgery) constituted 23.6% of patients. Patients with asthma constituted 30% of patients. Aspirin intolerance was found in 24.5%, and Samter's triad (nasal polyposis +asthma +aspirin intolerance) was found in 24.5%.

Limitations

-We were unable to access patient's data before 2015 due to lack of patients files prior to this year.
-We were unable to communicate with patients if some data was missing.
-Small sample size: The sample size represents only one hospital in our country, we could have had a bigger idea of the problem if there was a large database of several health centers.
-Difficulty in collecting data from sample records because some important information was not recorded by the medical staff or wrongly recorded.

Recommendations

-Conducting a future study in which the respiratory functions of asthmatic patients are compared before and after polypectomy.
-Importance of follow-up visits after surgery to avoid the problem of recurrence as much as possible.
-Registering all the important details of the patients and fully writing them in the records.
-Using electronic databases in Syrian hospitals.

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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