

Original research article

Clinical profile of patients with sinus disease underwent CT scan

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Abstract

The most common presenting symptoms for acute sinusitis include fever and toxicity; chronic sinusitis symptoms include facial pressure, headache, nasal obstruction, postnasal drip, and fatigue. All the patients who satisfied the inclusion criteria of the study were subjected to history taking and physical examination to identify clinical signs at presentation. Then the patients were subjected to CT scan of nose and paranasal sinus region and the anatomy of the sinonasal region was thoroughly assessed after a probable diagnosis was made. After completing all investigations, definitive management was done and the radiological features were correlated with the clinical and endoscopic diagnosis. In the present Study, 18.0% had Nasal Discharge, 42.0% had Headache, 16.0% had Nasal Obstruction, 10.0% had Loss of Smell, 12.0% had Post Nasal Drip, 4.0% had Epistaxis, 10.0% had Nasal Mass, 6.0% had Giddiness and 8.0% had Fatigue. The most common symptom in the present study was headache (42%) followed by nasal discharge (18%). The least common symptom was epistaxis (4%).

Keywords: Sinus disease, clinical profile, CT

Introduction

A variety of neoplastic, non-neoplastic and inflammatory conditions involve the sino-nasal cavity and these are very common lesions encountered in clinical practice. Unlike in acute sinus disease, the exact role of bacteria or other organisms in the cause of chronic sinusitis remains unidentified. The incidence is often stated to be between 1 and 4 % of the population. Inflammatory masses include polyps which are usually allergic in origin these are the commonest nasal masses ^[1]. Neoplasms of the sinuses and nasal cavity account for 0.2-0.8% of all carcinomas.

Epidemiology studies reported that women have nearly double the rate of chronic rhinosinusitis (CRS) when compared with men.

There are few studies which have found no difference in sex distribution of chronic rhinosinusitis ^[2].

The most common presenting symptoms for acute sinusitis include fever and toxicity; chronic sinusitis symptoms include facial pressure, headache, nasal obstruction, postnasal drip, and fatigue ^[3].

One study has shown that headache is most common symptom (65.8%), followed by nasal obstruction (22.4%) and post-nasal drip (21%). Ophthalmologic symptoms are less and that is 19.7% ^[4].

Another study done by Perie A: *et al.*, they have shown that out of 11 cases of mucocele of maxillary sinus, all complained of nasal obstruction, 10 had facial pain, 7 had nasal discharge, 5 had cheek pressure and 4 had epiphora and 4 had headache.

Methodology

Source of study: Patients referred by the out-patient department of ENT to the department of Radiology.

Study design: Prospective study.

Sample size: 50.

Sample design: A prospective study on correlation of anatomical variations of Paranasal Sinus region with chronic rhinosinusitis.

Study place: Department of Radio Diagnosis.

Method of collection of data

- All the patients who satisfied the inclusion criteria of the study were subjected to history taking and

- physical examination to identify clinical signs at presentation.
- Then the patients were subjected to CT scan of nose and paranasal sinus region and the anatomy of the sinonasal region was thoroughly assessed after a probable diagnosis was made.
- After completing all investigations, definitive management was done and the radiological features were correlated with the clinical and endoscopic diagnosis.

Inclusion criteria: All patients with clinical diagnosis of sinus disease between 18 to 65 years presenting to the OPD of department of Radiology.

Exclusion criteria

- Paranasal sinus neoplasms.
- Previous sinonasal surgery.
- Facial trauma.
- Sinonasal anatomy alteration or obscuration due to inflammatory diseases.
- Younger age of the patients (<18 years).

Results

Table 1: Age distribution among subjects

		Count	%
Age	<30 years	15	30.0
	31 to 40 years	17	34.0
	41 to 50 years	12	24.0
	>50 years	6	12.0
	Total	50	100.0

In this study, 30.0% were < 30 years, 34.0% were in 31 to 40 years, 24.0% were in 41 to 50 years and 12.0% were > 50 years. The mean age in this study was 37.46. Maximum number of cases were within the third decade (17 cases, i.e., 34%).

Table 2: Sex distribution among subjects

		Count	%
Sex	Female	26	52.0
	Male	24	48.0

In this study it was observed that 48% were male and 52.0% were female. The Male to Female ratio is 0.92:1.

Table 3: Symptoms distribution among subjects

	Present		Absent	
	Count	Row N %	Count	Row N %
Nasal Discharge	9	18.0	41	82.0
Headache	21	42.0	29	58.0
Nasal Obstruction	8	16.0	42	84.0
Loss of Smell	5	10.0	45	90.0
Post Nasal Drip	6	12.0	44	88.0
Epistaxis	2	4.0	48	96.0
Nasal Mass	5	10.0	45	90.0
Giddiness	3	6.0	47	94.0
Fatigue	4	8.0	46	92.0

In the present Study, 18.0% had Nasal Discharge, 42.0% had Headache, 16.0% had Nasal Obstruction, 10.0% had Loss of Smell, 12.0% had Post Nasal Drip, 4.0% had Epistaxis, 10.0% had Nasal Mass, 6.0% had Giddiness and 8.0% had Fatigue. The most common symptom in the present study was headache (42%) followed by nasal discharge (18%). The least common symptom was epistaxis (4%).

Table 4: Association between Symptoms and age distribution

		Age								P value
		<30 years		31 to 40 years		41 to 50 years		>50 years		
		Count	%	Count	%	Count	%	Count	%	
Nasal Discharge	Present	3	20.0	0	0.0	5	41.7	1	16.7	0.04*
	Absent	12	80.0	17	100	7	58.3	5	83.3	
Headache	Present	6	40.0	10	58.8	2	16.7	3	50.0	0.150
	Absent	9	60.0	7	41.2	10	83.3	3	50.0	
Nasal Obstruction	Present	2	13.3	2	11.8	3	25.0	1	16.7	0.794
	Absent	13	86.7	15	88.2	9	75.0	5	83.3	
Loss of Smell	Present	1	6.7	3	17.6	0	0.0	1	16.7	0.404
	Absent	14	93.3	14	82.4	12	100	5	83.3	
Post Nasal Drip	Present	3	20.0	2	11.8	0	0.0	1	16.7	0.445
	Absent	12	80.0	15	88.2	12	100	5	83.3	
Epistaxis	Present	0	0.0	1	5.9	1	8.3	0	0.0	0.655
	Absent	15	100	16	94.1	11	91.7	6	100	
Nasal Mass	Present	0	0.0	2	11.8	1	8.3	2	33.3	0.145
	Absent	15	100	15	88.2	11	91.7	4	66.7	
Giddiness	Present	1	6.7	1	5.9	0	0.0	1	16.7	0.575
	Absent	14	93.3	16	94.1	12	100	5	83.3	
Fatigue	Present	1	6.7	2	11.8	1	8.3	0	0.0	0.829
	Absent	14	93.3	15	88.2	11	91.7	6	100	

There was a significant difference in association of Nasal Discharge with Age Distribution. In subjects < 30 years, 20% had Nasal Discharge, in 41 to 50 years 41.7% had nasal discharge and in > 50 years 16.7% had nasal discharge.

There was no significant difference in other symptoms.

Table 5: Association between Symptoms and Gender distribution

		Sex				P value
		Female		Male		
		Count	%	Count	%	
Nasal Discharge	Present	5	19.2	4	16.7	0.814
	Absent	21	80.8	20	83.3	
Headache	Present	12	46.2	9	37.5	0.536
	Absent	14	53.8	15	62.5	
Nasal Obstruction	Present	5	19.2	3	12.5	0.517
	Absent	21	80.8	21	87.5	
Loss of Smell	Present	2	7.7	3	12.5	0.571
	Absent	24	92.3	21	87.5	
Post Nasal Drip	Present	1	3.8	5	20.8	0.065
	Absent	25	96.2	19	79.2	
Epistaxis	Present	2	7.7	0	0.0	0.166
	Absent	24	92.3	24	100.0	
Nasal Mass	Present	2	7.7	3	12.5	0.571
	Absent	24	92.3	21	87.5	
Giddiness	Present	2	7.7	1	4.2	0.600
	Absent	24	92.3	23	95.8	
Fatigue	Present	3	11.5	1	4.2	0.337
	Absent	23	88.5	23	95.8	

There was no significant difference in Association between Symptoms and Gender distribution.

There was no significant difference in Association in other symptoms as well.

Table 6: Association between Age distribution and Sinus Pathology

Pathology		Age								P value		
		<30 years		31 to 40 years		41 to 50 years		>50 years			Total	
		Count	%	Count	%	Count	%	Count	%		Count	%
Frontal Sinus	R	2	13.3	1	5.9	2	16.7	1	16.7	6	12.0	0.802
	L	2	13.3	1	5.9	3	25.0	0	0.0	6	12.0	
Ethmoid Sinus	R	5	33.3	6	35.3	3	25.0	0	0.0	14	28.0	0.384
	L	5	33.3	5	29.4	2	16.7	1	16.7	13	26.0	
Maxillary Sinus	R	5	33.3	8	47.1	3	25.0	3	50.0	19	38.0	0.581
	L	5	33.3	8	47.1	3	25.0	3	50.0	19	38.0	
Sphenoid Sinus	R	0	0.0	1	5.9	2	16.7	0	0.0	3	6.0	0.288

	L	1	6.7	1	5.9	1	8.3	0	0.0	3	6.0	0.916
Inferior Turbinate	R	5	33.3	7	41.2	4	33.3	4	66.7	20	40.0	0.515
Hypertrophy	L	8	53.3	7	41.2	5	41.7	4	66.7	24	48.0	0.678

There was no significant difference in Association between Age distribution and Sinus pathology.

Table 7: Association between Sex distribution and Sinus pathology

		Sex				Total		P value
		Female		Male		Count	%	
		Count	%	Count	%			
Frontal Sinus	R	1	3.8	5	20.8	6	12.0	0.065
	L	1	3.8	5	20.8	6	12.0	0.065
Ethmoid Sinus	R	7	26.9	7	29.2	14	28.0	0.860
	L	6	23.1	7	29.2	13	26.0	0.624
Maxillary Sinus	R	10	38.5	9	37.5	19	38.0	0.944
	L	11	42.3	8	33.3	19	38.0	0.514
Sphenoid Sinus	R	2	7.7	1	4.2	3	6.0	0.600
	L	2	7.7	1	4.2	3	6.0	0.600
Inferior Turbinate Hypertrophy	R	11	42.3	9	37.5	20	40.0	0.729
	L	12	46.2	12	50.0	24	48.0	0.786

There was no significant difference in Association between Sex distribution and Sinus pathology.

Discussion

In this study, the patients ages ranged from 18 to 65 yrs. 30.0% were < 30 years, 34.0% were in 31 to 40 years, 24.0% were in 41 to 50 years and 12.0% were > 50 years. The mean age in this study was 37.46 yrs. Study done by John Earwaker *et al.*, shows out of 800 patients, ages ranged from 12 to 81 years with the mean age being 39 years. Study done by Katya A. Shpilberg *et al.*, shown the patients ages ranged from 10 to 82 years. The mean age in the study was 47.9 years. Study done by Saraswathi Gopal *et al.*, shows out of 100 patients, ages ranged from 18-60 years. Study done by Ibrahim Sumaily shows out of 420 patients, ages ranged from 15 to 87 years with the mean age being 37.8 years. In this study it was observed that 52.0% were female and 48% were male. The Male to Female ratio is 0.92:1.

Table 8: Comparison of Sex Distribution

Sex	John Earwaker ^[5]	Shephali S Pawar ^[6]	Devimeenal Jagannathan ^[7]	Esin Kurtulus Ozturk ^[8]	Present Study
Male	45%	52%	49%	57%	52%
Female	55%	48%	51%	43%	48%

Study done by John Earwaker *et al.*, showed that out of 800 patients 440 were female and 360 were male. The Male to Female ratio is 1.3:1. Study done by Shephali S Pawar *et al.*, showed that out of 150 patients there were 52% males and 48% females. The Male to Female ratio is 1.08:1. Study by Devimeenal Jagannathan *et al.*, showed population ranging from 12-76 years 98 were males and 102 were females. The Male to Female ratio was 0.96:1. Study done by Esin Kurtulus Ozturk *et al.*, showed that out of 279 there were 57% males and 43% females. The Male to Female ratio was 1.32:1. Study done by Ibrahim Sumaily showed that out of 420 there were 49.8% males and 50.2% females. The Male to Female ratio was 0.99:1. The most common symptom in the present study was headache (42%) followed by nasal discharge (18%). The least common symptom was epistaxis (4%). One study has shown that headache is most common symptom (65.8%), followed by nasal obstruction (22.4%) and post-nasal drip (21%).

In this study there was no significant difference in association between sex distribution and sinus pathology. This is in keeping with other studies which have found no difference in sex distribution of sinus disease.

Conclusion

The most common symptom in the present study was headache (42%) followed by nasal discharge (18%). The least common symptom was epistaxis (4%).

4. There was no significant Association between Symptoms and Gender distribution. However in this study positive association was seen between Symptoms (Nasal discharge) and Age distribution.

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