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Clinical profile of patients with atrophic rhinitis: descriptive study

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ABSTRACT

Background: Atrophic rhinitis is a chronic nasal disease, characterized by a triad of symptoms, namely foul odour, atrophy of nasal mucosa and crusts formation. The understanding of the pathophysiology and the management of atrophic rhinitis has long been a vexing problem for the treating clinician. Hence some authors have recommended adopting a capsular dissection technique in order to avoid these complications.

Methods: This present study was conducted in the Department of E.N.T, in which all the cases diagnosed as primary atrophic rhinitis and who were willing to undergo this surgery during the study period were taken for the study. Totally 20 patients were included for the study. Patients with secondary atrophic rhinitis were excluded.

Results: In our study foul smelling nasal discharge and falling of crusts were the most commonest presenting symptoms which were present in all 20 patients (100%). The other presenting complaints were loss of sense of smell in 19 patients (95%), nasal obstruction in 16 patients (80%), bleeding from nose in 9 patients (45%), headache in 9 patients (45%) and maggots in 2 patients (10%).

Conclusions: The incidence of atrophic rhinitis is more in low, less in middle and nil in high socio economic status group of patients and smelling nasal discharge and falling of crusts were the most commonest presenting symptoms.

Keywords: Atrophic rhinitis, Nasal discharge, Socio economic status

INTRODUCTION

Fraenkel (1876) described atrophic rhinitis as a chronic nasal disease, characterized by a triad of symptoms, namely foul odour, atrophy of nasal mucosa and crusts formation. The understanding of the pathophysiology and the management of atrophic rhinitis has long been a vexing problem for the treating clinician. The exact etiology is not known, various theories have been put forth to explain the etiopathogenesis which are as follows.²

Deficiency theory

Iron deficiency theory

Bernat (1965) concluded that atrophic rhinitis is a disease due to hyposiderosis. But Mros et al (1966) and Barkve and Djupesland (1968) could not prove the same.

Endocrine theory

Incidence of the disease among females is more common espically at puberty. Mortimer et al (1937), Eagle et al (1939), and Bernheimer and Soskin (1940) related this disease related this disease to oestrogen lack. However, Taylor and Young (1961) referring to the work of Harrison (1957) stated that is the high level of oestrogen which might be an aetiological factor.

Infection by specific organisms

Bacterial theory as primary pathogenic factor is supported by Adam (1934), Cullom (1941), Surgan (1952), Rosen et al (1953). Ishwar Singh (1994) has given an account of bacteriological profile in atrophic rhinitis. Klebsiella and pseudomonas in combination

were the commonest. The culture was found to be sterile in 7.52% cases, of the total 75 cases.

Sinus infection theory

Bosworth (1889) and Grunwald (1902) proposed that purulent rhinitis and sinusitis in children is the primary factor in the pathogenesis of atrophic rhinitis. This has been favoured by Myles (1908), Thomas (1911), Hajek (1926), Hoople and Rowe (1927) and Turner (1927).

Developmental theory

Wachsberger (1934) and Pesti (1949) attributed the cause to poor pneumatization of the antra hence compensatory wide nasal fossae. Girgis (1966) supported the presumption that ozaena occurs as a result of excessive patency of the nasal cavities in relation to the shape and types of skull. Zaujre (1965) considered that the congenital roomy nostrils as the causative factor. According to Wachsberger unusual widening of the nasal cavity can affect circulation, during inspiration and expiration there is a change from negative to positive pressure. This change in pressure helps to maintain a circulation in nose. In a wide nasal passage the change to pressure may be absent and circulation may become sluggish, resulting in diminution of secretory activities of the nasal glands.

Autonomic imbalance theory

Ruskin (1932) concluded that the disease is caused by the abnormal sensitiveness of the constrictor nerves. Particular stress was laid on the vasoconstrictor and vasodilator action of the sympathetic and parasympathetide systems. Ghosh (1987) proposed that primary atrophic rhinitis belongs to a group of conditions under the heading, reflex sympathetic dystrophy syndrome.

Collagen disease theory

Ricci (1959) suggested that atrophic rhinitis is an autoimmune disease related to the group of collagen diseases. Taylor and Young (1961) also found that the endothelial cells lining the dilated capillaries had more cytoplasm than the normal capillaries and showed positive reaction for alkaline phosphatase which suggested to them the presence of active absorption of bone which is a feature of atrophic rhinitis. But they were unable to demonstrate endarteritis and periarteritis of terminal arterioles.

METHODS

This present study was conducted in the Department of E.N.T, in which all the cases diagnosed as primary atrophic rhinitis and who were willing to undergo this surgery during the study period were taken for the study. Totally 20 patients were included for the study. Patients

with secondary atrophic rhinitis were excluded. The cases diagnosed as primary atrophic rhinitis were subjected to detailed history and examination. Clinically following conditions were ruled out – tuberculosis, syphilis, rhinoscleroma, leprosy.

RESULTS

Our study included 20 patients. After confirming the diagnosis histopathologically, patients were selected for the present study. All the patients were investigated for causes of secondary atrophic rhinitis. The age of the patients varied from 19 years to 64.5 years (mean 29.9 years). Majority of patients (50%) were in the third decade of life. In the present study, sex distribution showed a female preponderance with 55% and 45% were males. The female to male ratio was 1:0.8.

Table 1: Age distribution.

Age (Years)	Number of patients	Percentage
11-20	5	25
21-30	10	50
31-40	2	10
41-50	-	-
51-60	1	5
61-70	2	10
Total	20	100

Table 2: Sex distribution.

Sex	Number of patients	Percentage
Male	9	45
Female	11	55

The incidence of atrophic rhinitis is more in low, less in middle and nil in high socio economic status group of patients. In the present study all the patients belonged to low socio economic status.

Table 3: Socioeconomic status.

Socio economic status	Number of patients	Percentage
High	-	-
Middle	-	-
Low	20	10

In our study foul smelling nasal discharge and falling of crusts were the most commonest presenting symptoms which were present in all 20 patients (100%). The other presenting complaints were loss of sense of smell in 19 patients (95%), nasal obstruction in 16 patients (80%), bleeding from nose in 9 patients (45%), headache in 9 patients (45%) and maggots in 2 patients (10%) as shown in Table 4.

In our study majority of patients i.e., 12 patients (60%) had symptoms for a period between 2-4 years. 7 patients

(35%) had symptoms for a period of more than 4 years, with one patient for 10 years in this group. 1 patient (5%) for a period of less than 2 years as given in Table 5.

Table 4: Symptoms.

Symptoms	Number of patients	Percentage
Nasal	20	100
Falling of crusts	20	100
Loss of sense of smell	19	95
Foetor	17	95
Nasal obstruction	16	80
Bleeding from nose	9	45
Headache	9	45
Maggots	2	10

Table 5: Duration of symptoms.

Duration of symptoms	Number of patients
< 2 years	1
2-4 years	12
> 4 years	7

Roomy nasal cavity with crusts, pale mucosa and atrophic turbinates were found in all the 20 patients (100%), deviated nasal septum in 5 patients (25%), septal perforation in 2 patients (10%). In the patients with deviated nasal septum, surgery was carried out on the side opposite to the deviation in view of it more roomy then the other side. Bilaterality of the disease was observed in 19 patients (95%), only 1.

Table 6: Signs.

Signs	Number of patients	Percentage
Foetor	20	100
Crusts	20	100
Roomy nasal cavity	20	100
Pale atrophic mucosa	20	100
Atrophic turbinates	20	100
Deviated nasal septum	20	100
Septal perforation	2	25
Bilaterality of disease	19	10

DISCUSSION

The study included 20 patients of primary atrophic rhinitis who were willing for the surgical line of treatment. All the cases were investigated for causes of secondary atrophic rhinitis. None of the patients showed

any signs of leprosy, syphilis, rhinoscleroma or tuberculosis.

As has been shown in Table 1, in our study age of the patients varied between 19 and 65 years, with a mean of 29.9 years. In our study the majority of the patients, 10 cases (50%) were in the third decade. In a study by Gadre, 32.4% of patients (of 37 patients) were in the third decade.³

In the present study 9 patients i.e., 45% were males while 11 patients i.e., 55% were females, there is a female predominance. According to Pampori, female predominance was 77.7% and according to Sharan, a male predominance of 85.7% was noted.^{4,5}

Eventhough it is said that atrophic rhinitis is common at puberty it was not seen in our study. Because these studies involve only patients who are willing to undergo the surgical procedure, these numerical variations in the age distribution and sex predominance are bound to occur.

As shown in Table 3, in our study all the patients belonged to low socioeconomic status. Ssali (1973) stated, atrophic rhinitis to be a disease prevalent among the poor or malnourished individuals.⁶ Hence it is found less and less frequently in more developed countries while it is common in developing ones.

As shown in Table 4, in our study foul smelling nasal discharge and falling of crusts were the most common symptoms which were present in all patients (100%). The next common complaints were loss of sense of smell in 19 patients (95%), nasal obstruction in 16 patients (80%). The other symptoms were bleeding from the nose in 9 patients (45%), headache in 9 patients (45%) and maggots infestation in 2 patients (10%). According to study done by Gadre, foul smelling Nasal discharge and crusting were present in all patients (100%). Similar findings were observed in our study.

Abnormality of smell can be anosmia or hyposmia. Anosmia may be present and the patients are often made aware of the loathsome effluvium surrounding them by the reluctance of others to come within their vicinity. It has been reported that, anosmia can be a presenting feature in 40-90% of the patients by Datti. The nerve endings undergo degeneration leading to hyposmia or anosmia depending on the severity of the disease. In our study also 5% patients had normal olfaction and in 95% patients had anosmia, similar to other studies.

In patients (10%) with previous history of maggots infestation, patients were taken up for the surgery, only once they were free from maggots and adequate antibiotics given to treat the local infection. But among these 2 cases we were able to create a neoturbinate in only 1 case, the other case had per-operative bleeding

secondary to hypertension, for which surgery was abandoned.

As shown in Table 5, majority of patients had duration of symptoms ranging from 2-4 years. However there was significant number of patients whose duration of symptoms was more than a period of 4 years, only one patient had his symptoms of duration less than 2 years. According to Sharan, good results were obtained in patients with shorter duration of symptoms, similar observations were noted in our study also. 5 the outcome in patients with duration of symptoms between 2 to 4 years are, excellent in 4 patients (20%), good in 2 patients (10%), considering only the bolgerized cases.

As shown in Table 6, in our study the most common clinical signs were crusting, roomy nasal cavity, atrophic nasal mucosa and atrophic turbinates in all 20 patients (100%). The other findings were deviated nasal septum in 5 patients (25%), septal perforation in 2 patients (10%). According to Gadre, the most common signs were roomy nasal cavity (100%), nasal crusting (100%), turbinate atrophy (86%).³ Similar findings were observed in our study. According to Pampori, bilaterality of the disease was 80% and unilateral in 20%. Unilateral atrophic rhinitis had deviated nasal septum to the opposite side.

CONCLUSION

In our study bilaterality of the disease was observed in 19 patients (95%) and unilateral in 1 patient (5%). One case of unilateral atrophic rhinitis had deviated nasal septum to the opposite side. 1 patient had depressed nasal bridge with a bony septal perforation. Another patient had depressed dorsum with cartilaginous septal perforation.

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Institutional Ethics Committee

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