

CLINICOPATHOLOGICAL STUDY OF ATROPHIC RHINITIS

Satyajit Mishra, Ranjan Kumar Guru, Nirupama Pati

1. Assistant Professor. Department of ENT, VSS Medical College, Burla, Odisha.
2. Senior Resident. Department of ENT, VSS Medical College, Burla, Odisha.
3. Post Graduate Student. VSS Medical College, Burla, Odisha.

CORRESPONDING AUTHOR

Dr. Satyajit Mishra
Assistant Professor,
Dept. of E.N.T. , Head and Neck Surgery,
V.S.S. Medical College and Hospital,
Burla, Odisha. Pin – 768017.
E-mail: dr.satyajitmishra@gmail.com
Ph: 0091 9437088951

ABSTRACT: To evaluate the clinical feature & pathology of atrophic rhinitis [AR] 75 cases of AR were evaluated retrospectively. Maximum cases were in the age group 20–30 years [40%]. Male: female ratio was 1:1.5. Major symptoms were foul smell from nasal cavity along with crusting. The major signs found were atrophy of lateral nasal wall along with turbinates & nasal crusting. The most common organism found in nasal cavity & antrum were *Pseudomonas aeruginosa* followed by *Klebsiella ozaenae*.

The present study describes the clinicopathological profile of 75 cases of atrophic rhinitis from 1.1.2011 to 31.12.2012 in the Dept. of ENT VSS Medical college Burla-Odisha.

KEY WORDS: atrophic rhinitis

INTRODUCTION: Atrophic rhinitis a chronic nasal disease characterised by progressive atrophy of mucosa & underlying bone of turbinates & form crusts which emit characteristic foul odour that is termed as ozaena. Although many of the pioneers have contributed handsomely to the entity of AR it still poses an intractable problem in rhinology which has been baffling to the mankind from time immemorial. Although atrophic condition of the nose has been known to the most ancient physicians from the days of Hippocrates, the term ozaena was coined by Claudius Galenus. A similar nomenclature to ozaena is found in ayurvedic literature as peenash. The disease is characterised by nasal obstruction due to crusts, roomy nasal cavity & foul smell emanating from nasal cavity of the patient.

This study is a retrospective one done by selecting 75 cases of AR who were admitted & regularly followed up in the Dept. of ENT VSS Medical College Burla from 01.01.2011 to 31.12.2012. The aim of present work is to study the clinicopathological aspects of atrophic rhinitis.

MATERIAL & METHODS: The study was carried out from 01.01.2011 to 31.12.2012 in Dept. of ENT VSS Medical College, Burla. Out of all cases of AR who were admitted in our department in the said period, 75 cases were selected randomly for study & their case records were evaluated. HP study of nasal mucosa, X-ray PNS (water's view) & antral puncture had been done in every case. The aspirated pus from antral puncture or the fluid aspirated after instillation of 2cc of luke warm sterile saline in the antrum had been sent for culture & sensitivity study. All above reports were evaluated.

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OBSERVATIONS: INCIDENCE: - The incidence of AR in our department is 0.615% of outdoor cases.

AGE & SEX DISTRIBUTION: - The youngest patient was of 11 year & oldest was of 70 years of age. The maximum number of cases was in age group 21-30 years [40%]. The male: female ratio was 1:1.5.

The patients presented with history of foul smell to others & nasal crusting in 65 [87.5%] cases, anosmia in 51 [68.7%] cases, epistaxis in 27[36.12%] cases, Headache in 58 [78.04%] cases. In 19 [25.32%] cases there was involvement of more than one member of the family by the same disease.

Atrophy of lateral wall found in 67 [90.49%] cases, crusts found in 65 [87.5%] cases, deviated septum found in 18[23.16%] cases, perforation of septum found in 6[7.92%] cases, maggots found in 15 [19.84%] cases & maxillary sinusitis found in 21 [28%] cases.

DISCUSSION: Atrophic rhinitis [ozaena] is a chronic inflammation of nose characterised by atrophy of nasal mucosa & turbinate bones. The nasal cavities are roomy & full of foul smelling crusts. The exact cause of the disease is not known. Various theories regarding its causation are hereditary, endocrinal disturbance, racial predisposition, nutritional deficiency [A,D, & iron], infective[K. ozaenae, staph] & autoimmune processes[1].

The incidence of AR in Dept. of ENT is 0.165% of outdoor cases. Most of the cases were found between 20-30 year of age which is comparable with the study by Hall & Macleoid {1942}[2]. The male: female ratio in our study is 1:1.5, which is comparable to the study by Sharma & Shardana{1966}[3]. Sharma & Shardana in their study showed that 66% of cases of AR were females.

Most common symptom was foul smell to others & crusting. This is comparable to the study by Datti P.V.[1974] who found foetor in 90% of cases of AR[4]. The Most common sign of our series is atrophy of lateral nasal wall. This was not found in such a high percentage of cases in the series of Datti P.V. {1974}[4]. Some of the cases in their series may be of very early stage. As our patients are mostly rural folk with lesser medical care at their disposal, they come to this tertiary centre with an advanced stage of the disease. Hence the high percentage of cases of atrophy of lateral wall.

Most common micro organism were Pseudomonas followed by K. ozaenae, but mixed group of organism found in highest percentage of cases which is comparable to the study by Hoople & Rowe {1927}[5].

In HP study partial metaplasia with squamous epithelium replacing the nasal epithelium was found in 58% cases which is comparable to the study by Sinha et al{1975}[6].

CONCLUSION: From the above study we can conclude that AR mostly occurs in third decade of life affecting more females with foul smell & crusting as the predominant symptoms. Atrophy of lateral nasal wall is the predominant sign. MC organism found in nasal cavity is Pseudomonas & Klebsiella & the MC histopathological change in the nasal mucosa is partial metaplasia with sq. epithelium. As the pathological findings shows a change of normal respiratory mucosa of nasal cavity to a squamous one, the normal physiological functions of the nasal cavity is totally jeopardised. This may make the patient prone to infections by different organisms and this may be the cause why Pseudomonas and other organisms were isolated in culture studies. Therefore,

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a clinical and pathological (both histopathology and culture study) should be carried out in Atrophic rhinitis cases for a better long term outcome for the patients.

ABBREVIATIONS:

AR – Atrophic rhinitis
MC – Most common
HP – Histopathological
Sq – Squamous.

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Table 1_AGE INCIDENCE

Age group	Female	Male	Total	Percentage
1 to 10	-	-	-	-
11 to 20	15	8	23	30.66
21 to 30	19	11	30	40
31 to 40	0	4	4	5.34
41 to 50	7	0	7	9.34
51 to 70	4	7	11	14.66
Total	45	30	75	100

Table 2_SYMPTOM & SIGNS

Symptoms	No of cases	Percentage
Foul smell to others	65	87.5
Crusting	65	87.5
Anosmia	51	68.7
Epistaxis	27	36.12
Nasal obstruction	13	17.23
Headache	58	78.04
Signs	No of cases	Percentage

ORIGINAL ARTICLE

Atrophy of lateral wall	67	90.49
Crusting	60	80.36
Deviated septum	18	23.16
Perforation of septum	6	7.92
Maggots	15	19.84
Sinusitis	21	28

In most no. of cases pseudomonas [24%] was isolated, followed by Klebsiella ozaenae, Staph aureus, Mycobacterium leprae & Streptococcus.

Table 3 Micro-organism isolated

Organism	No of cases	Percentage
Pseudomonas	18	24
Klebsiella ozaenae	13	17.33
Staph aureus	7	9.33
M. leprae	1	1.33
Streptococcus	7	9.33
Mixed	24	32
Sterile	5	6.67
Total	75	100

Sq. Metaplasia with ciliated epithelium at places was found in 44[58%] cases. Total Sq. Metaplasia found in 25 [34%] cases. Sq. Metaplasia with marked hyperkeratosis , parakeratosis or acanthosis found in 6[8%] cases.

Table 4 HISTOPATHOLOGICAL STUDY

Features	No of cases	Percentage
Sq. metaplasia with ciliated epithelium at places	44	58
Total sq. metaplasia	25	34
Sq. Metaplasia with marked hyperkeratosis, parakeratosis or acanthosis	6	8
Total	75	100