Eustachian Tube in Atrophic Rhinitis

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Atrophic Rhinitis is a chronic non-specific disease characterised by atrophy of mucosa and turbinate bones. Maxillary antrum may sometimes be involved as result of primary disease or at time secondary to mucosal pathology or crusting. Extension of disease involving the eustachian tube is uncertain. In the present study, endoscopy of the nasopharynx was performed in 20 patients with atrophic rhinitis to find out the type, nature and site of lesion at the orifice of the eustachian tube. The lesion was found in seven cases (35%) involving the eustachian tube. The lesion occurs in form of atrophic changes with crusting granuloma and thick mucoid area. Endoscopy is also found to be therepeutic value in removing the thick discharge crust etc. at the orifice of eustachian tube to prevent the otological complications

INTRODUCTION

Atrophic rhinitis is a chronic inflammatory disease characterized by atrophy of the turbinate bones and mucous membrane; and crusting and abnormal patency of the nasal passage associated with characteristic foetor. The entire nasal cavity from the anterior to posterior end, extending upto the nasopharynx is involved. The disease sometimes spread to maxillary antrum also (Soni and Gupta 1993). Due to extensive involvement of the nasal fossa, there is a possibility of spread of disease into the eustachian tube. The definite study on the involvement of the eustachian tube is lacking. Most of the standard text books mention passing reference "secretory otitis media or retracted ear drum may be seen due to obstructive crust deposition at the nasopharyngeal opening of the eustachian tube".

Others describe, "Patients may feel heaviness in the ear or there may be recurrent attack of otitis media". These vague views suggest, there is no definite study of eustachian tube in atrophic rhinitis. Survey of the literature reveals no systematic study of direct visualization of the eustachian tube in atrophic rhinitis.

It is seen that puretone audiometry and tympanometry are of limited help in assessing wheather middle ear problems are due to actual involvement of the eustachian tube by an atrophic pathology or by a secondary effects of atrophic rhinitis, so nasopharyngoscopy is the only means at our disposal to know the exact pathology at the nasopharyngeal orifice of the eustachian tube. Thus the present study was

Table I
Radiological picture in 20 cases of atrophic rhinitis

Radiological Observation	Number of cases
Diffuse opacity	4
Patchy opacity	4
Thickened mucosa	5
Normal	7

Table II
Showing various type of lesion in Endoscopy at the Eustachian tube orifice

Type of lesion	Number of cases
Normal	13
Atrophic patches with crusting	4
Granulomatous tissue with thick secretion	2
Thick raised mucosa	1

Table III
Showing relationship between radiological observation and nasopharyngoscopic findings at the orifice of the Eustachian tube

Radiological Observation	Number of cases	Nasopharyngoscopic findings			
		Normal	Atrophic	Granuloma	Thick mucosa
Diffused opacity	4	1	2	1	—
Patchy opacity	4	2	1	1	—
Thickened mucosa	5	3	1	—	1
Normal	7	7	—	—	—
Total	20	13	4	2	1

undertaken to investigate the eustachian tube by direct visualization by means of nasopharyngoscope to know the incidence, nature of pathology involving the eustachian tube opening in atrophic rhinitis.

MATERIAL AND METHODS

Twenty confirmed atrophic rhinitis patients attending ENT unit were studied. Twelve patients were male and eight were female. The majority of the patients were between age of 20 to 35 years. In each case complete ENT examination was performed. Intranasal examination was done and findings were recorded which were consistent with primary atrophy rhinitis. Complete otoscopic examination was done in each case, wax removed if any. The findings were recorded. Three patients (15%) showed clinical evidence of retracted ear drum head in one or both ears. Similarly pharyngeal and laryngeal examinations were done in each case. After thorough clinical examination, X-ray of the paranasal sinuses (water's view) was done in each case. All patients had positive findings on one or both sides.

Nasopharyngoscopy was done in each patient, using a storz 70° angled rigid nasopharyngoscope after surface anaesthesia (Lignocaine 4%) to study the eustachian tube orifice. Biopsy was taken in four patients. The type, nature and site of pathology was recorded.

OBSERVATION

Eleven out of twenty patients (55%) had

positive evidence of lesion in antrum. Various types of the lesion seen in the antrum are shown in table I. Seven out of the twenty patients revealed pathological changes around the pharyngeal end of the eustachian tubes while the remaining cases were normal. Various type of pathology seen are shown in table II.

The nasopharyngoscopic findings were found to be related with radiological observation (table III).

DISCUSSION

Endoscopy is the best means for making accurate diagnosis of maxillary antrum lesions. Endoscopy of the nasopharynx has repeatedly been shown to provide valuable information which is superior to that obtained by other clinical and radiological investigation (Abou. Biech and Bedawy 1975, Gaimea 1990, Soni 1994). Moreover endoscopy of nasopharynx not only allows direct visual assessment of the pathology but also allows to take biopsy from the lesion and thus is helpful in confirming to be actual a part of disease or the lesion is due to secondary effect of atrophic rhinitis or crusting.

The nasopharyngoscopy in the present study of 20 atrophic rhinitis patients reveals the presence of a positive lesion at the orifice of the eustachian tube in 7 cases (35%). The present study reveals different types of lesions ranging from evidence of atrophic changes with crusting, thick secretion, non-specific granuloma and even thick hypertrophic mucosa. These different types of

lesion have been found to be related with antral involvement. The eustachian tube lesion is found to be more common in patients having radiological findings in the maxillary antrum. This shows that the disease has a special tendency to extend so eustachian tube may also involved in such cases. The microscopic pathology at eustachian orifice is almost similar to that of the nasal cavity however the number of mucous glands were scanty and ill defined.

Involvement of eustachian tube may act as a predisposing factor for retracted ear drum, secretory otitis media and also for recurrent attacks of otitis media. It has also been found

that the patient with affection of eustachian tube needs more frequently alkaline nasal wash than the non-affected patients and also the patient with eustachian tube lesion has more constant and more profuse foetor.

Thus the present study reveals that 35% of the patient have a subclinical involvement of the eustachian tube which may lead to subsequent unrepairable irreversible changes like scarring or stenosis of the eustachian tube causing permanent disability. So it is worthwhile to perform endoscopy of nasopharynx in atrophic rhinitis patients.

References

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