

## OTALGIA

M.K. Taneja

**Abstract:** 1236 Patients from the outdoor department(OPD) were examined during 2000-2001. Only 39.7% had pathology in ear and 57.4% had referred pain, 2.84% could not be diagnosed and they were suspected as functional. Impacted wax & otomycosis as pathology in ear & as referred pain impacted molar, styloiditis & cervical spondylosis were the main factors for pain in ear.

**Key Words:** Otolgia, Referred otalgia, Otomycosis, Impacted wax, Impacted molar, Styloiditis.

Pain in ear otalgia is one of the common presenting symptoms in ENT known as outdoor, sometime demanding even an emergency management. It is easy to diagnose when pathology like otitis externa, otitis media, otomycosis etc. is present in ear, but pain originating from a source outside the ear is difficult to diagnose and it is then termed as referred

eral practitioner is to attribute the reason of pain in the ear by way of infection. Referred otalgia is a challenge to identify the cause by careful history, elaborate examination, keeping in mind the rich sensory nerve innervation of ear from four cranial nerves and two cervical nerves which also supply other parts of head & neck including thorax and abdomen.

Table I A

Age	Total No.	Male	Female	%
0-1 yrs.	50	26	24	8.94
1-2 yrs.	88	49	39	15.71
2-3 yrs.	56	34	22	10
3-5 yrs.	80	42	38	14.28
5-8 yrs.	32	17	15	5.72
8-12 yrs.	124	55	69	22.14
12-15 yrs.	130	72	58	23.21
Total	560	305	255	100%

### AGE & SEX DISTRIBUTION

Table I B

Age	Total no.	Male	Female	%
15-20 yrs.	256	100	156	37.87
20-30 yrs.	121	51	70	17.90
30-40 yrs.	103	41	62	15.24
40-70 yrs.	196	89	107	28.99
Total	676	281	395	100%

### AGE & SEX DISTRIBUTION

Mild abnormality of tympanic membrane or the ear canal not responding to antibiotics and conservative management a referred pain by malignancy elsewhere in head and neck should also be

otalgia. The usual tendency of a patient and the gen-

considered. We have made an effort to find out the causes in all the age groups.

### MATERIAL & METHOD

The patient attending the out door department(OPD) of Indian Institute of Ear Diseases, Muzaffarnagar were examined from 2000-2001 for 2 years.

A total no. of 1236 patients divided in 2 groups. Group I below the age of 15 years & Group II above 25 years of age distribution is shown in table I A and I B A detailed history specifically for duration and character of pain, its radiation and

and restricted mobility. In undiagnosed suspected case of referred pain the neck was thoroughly re-examined for thyroid gland, lymph node including secondary metastatic nodes.

The patient was investigated by gram staining [otitis externa & otitis media] tympanometry and audiometry [acute otitis media & eustachian tube dysfunction] X-Rays, Mandible oblique view [impacted molar], T.M.joint, cervical spine, styloid process & for mastoids wherever required.

### RESULT

In 491 patients a lesion could be found out in the ear itself. The cases were predominantly of ear wax [163-33.20%] and otomycosis [137-27.9%] next was otitis externa and Eustachian tube dysfunction. Details are shown in Table II. Majority of the patient 57.44% attending our OPD were diagnosed as a case of referred otalgia. The most common cause was impacted molar [171-24.08%] in young girls details being shown Table III. There were 35 patients [2.84%] in whom diagnosis could not be made and were put on empirical treatment with

Lesion in the ear	No.	%
Otitis Externa	54	11
Otomycosis	137	27.90
Cholesteatoma of external canal	9	1.83
Otitis media	44	8.96
Eustachian tube dysfunction	44	8.96
Impacted wax.	163	33.20
Foreign body		
- animale	10	2.04
- vegetative	12	2.44
- metallic	3	0.61
Perichondritis	5	1.02
Mastoiditis	10	2.04
Total	491	100%

EAR PATHOLOGY OBSERVED IN EARACHE

precipitating or aggravating factor was noted. Any history of trauma, sorethroat, dental treatment or clicking sound in T.M. joint also interrogated. The ear was examined at large including valsalva and pneumatic otoscopy. Microsuction, if required was done. Throat was examined by indirect laryngoscopy including palpation of styloid process. In the middle aged where no cause could be found out in ear, the neck was examined for spasm, abnormal posture

Referred Pain	No.	%
Impacted Molar	171	24.08
Dental Pain	81	11.41
Styloiditis	144	20.29
Cervical Spine Lesions	157	22.11
Pharyngeal lesions	121	17.04
Laryngeal lesions	36	5.07
Total	710	100%

CAUSES OBSERVED FOR REFERRED PAIN

provisional diagnosis as functional, majority of them were above the age of 50 years.

9 cases of cholesteatoma of external auditory canal were recorded all were from young age, seven being from the agegroup of 15-20 yrs. & 2 from 20-30 yrs. of age. 25 cases of F.B. ear were re-



ported to our centre, 10 animate, 12 vegetative & 3 metallic. All cases were first attended by general practitioners and had bleeding from ear.

### DISCUSSION

The cause of otalgia was different predominantly in younger age group from middle age or older age group. In the children below 15 years majority of the patient had pathology in ear only few

Total No.	1236	100%
Lesion in Ear	491	39.72%
Referred Pain	710	57.44%
Undiagnosed [Functional]	35	2.84%

#### SITE OF LESION OF EARACHE

had pain due to dental or pharyngeal [tonsil] origin. The sinusitis with eustachian tube dysfunction was another very common cause of pain in ear<sup>1</sup>. The neural pathway is along the second branch of trigeminal nerve and the auriculotemporal nerve, anaesthetizing the nose at the time of nasal endoscopy for diagnosis relieves the pain in majority. We have observed a 5% incidence of Foreign bodies (FB) in our series while others have reported as high incidence of 23% and even foreign body in the nose (2%) has also been reported as a cause of referred otalgia<sup>2</sup>.

The commonest cause of pain in the ear was wax, followed by otomycosis in young age group. In 1.83% cases cholesteatoma of external auditory canal was observed as a cause of recurrent dull pain. The commonest cause of referred otalgia in young age group was impacted molar & was difficult to satisfy the patient even after X-Rays. While Styloiditis was the most common cause of referred pain in 30-40 years age group & styloiditis cervical spondylosis and T.M. joint were the offender in the middle age group. Radiology was usually inconclusive in T.M. joint lesion especially in arthrosis while cervical spine report was

misleading either osteophytes or reduced space was observed in majority leading to misdiagnosis.

Dental caries was observed only in 0.7% patient of referred otalgia while other have reported a quite high incidence 23% might be a better awareness in patient<sup>3</sup>. Keeramaekusk *et al* have also observed a high incidence in female (75%) in T.M. joint disorders<sup>4</sup>. Wright FF has reported in patients with T.M. disorder having symptom of tinnitus, dizziness and otalgia after providing orthotic treatment relieved considerably, dizziness 91%, Tinnitus 64% & Otalgia 87%<sup>5</sup>.

Styloiditis was observed mostly in female & required surgery in majority. In old age it was difficult to make final diagnosis in cases of dental extraction for complete denture having enlarged styloid process on radiography and pain in T.M. Joint. Author operated a 28 year muslim female having attic cholesteatoma with pain, her symptom of pain could not be resolved after surgical cure of cholesteatoma and on re-examination diagnosed as styloiditis and patient was relieved after styloidectomy. Gustatory otalgia with wet ear also has been reported after ear surgery<sup>6</sup>. Referred Otalgia may be due to various neuralgias by way of irritation in the nerve itself and lancinating pain is felt in the distribution of nerve like Trigeminal, Genuiculate, Sphenopalatine, Vidian and Glossopharyngeal neuralgia. Attempt has been made by surgical management with 72% success in terms of providing pain relief and no surgical mortality<sup>7</sup>.

No case in our series of malignancy presented as otalgia but a well known strong association exists with malignancy of pharynx and larynx and has been reported as high as 19%. Sensory branches of the vagus and glossopharyngeal nerves supply upper aerodigestive tract mucosal areas such as nasopharynx, oropharynx, hypopharynx, and larynx. Tumors of temporal bone such as meningiomas, glomus jugulare and cerebellopontine angle

lesions also lead to otalgia<sup>8</sup>.

In other causes pharyngeal, laryngeal and infection of posterior ethmoidal cells or herpes zoster<sup>2</sup> otitic thyroiditis<sup>9</sup>, drug induced mesalazine and sulphasalazine<sup>10</sup>, intrapetrous carotid artery aneurysm presenting as epistaxis and otalgia<sup>11</sup>, gastro-oesophageal reflux<sup>12</sup> and including subacute left fronto parietal subdural haematoma presenting solely as otalgia and neuro surgical drainage relieved the symptom completely<sup>13</sup> are reported causes of referred ear ache in literature.

## CONCLUSION

In paediatric age group the ear itself is the cause of earache while in the adults and the old aged, pain is referred one mostly. In young girls impacted molar & styloiditis in adult females should be considered if no cause could be traced in the ear. After ear surgery if pain is still persists any lesion in the area of nerve supply of trigeminal, facial, glossopharyngeal, vagus, great auricular and lesser occipital nerve should be looked for. Otalgia is a difficult problem and it needs detailed assessment to provide better service to such a patient.

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