

Original Research Article

Etiological and clinical profile of otalgia in a tertiary care hospital

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Abstract

Background: Otolgia (earache) is one of the commonest presenting complaints of the patients visiting ENT OPD. Ear pain can be because of pathologies in the ear or in the surrounding head and neck region. This is because of rich innervations of the ear. Sometimes it poses a diagnostic challenge.

Aim: To study the clinical and etiological profile of patients with ear pain at our tertiary care hospital.

Material and Methods: A cross sectional study was conducted in Department of ENT. All patients are subjected to full history and ENT examination, in addition to examination of Temporo-mandibular joint (TMJ) and neck. Some patients were sent for audiological and radiological assessment according to the finding in the examination.

Result: Out of 855 patients with Otolgia, 305 (35.7%) had referred Otolgia of this 39% were men and 61% were women. Commonest etiology of referred Otolgia was dental causes followed by TMJ dysfunction. 2% patient had underlying malignancies. 33.8% had right earache, 44.2% had left earache and 22% had bilateral earache

Conclusion: Careful detailed evaluation of the Otolgia patient should be done to identify the exact underlying cause and treat effectively.

Keywords: Otolgia, temporo-mandibular joint dysfunction, cervical spine lesion

Introduction

Ear pain or Otolgia is one of the commonest symptoms that bring a patient to an ENT clinic; it affects any age group and may reflect a serious disease process in or outside the ear. Majority of the time the underlying causes are pathology in the ear which is referred as primary Otolgia.

There are quite a number of causes that can present as Otolgia and the ear look normal in otoscopy. These are called secondary or referred Otolgia. This is because of complex nerve innervations of the ear^[1, 2]. There can be different pathologies as a cause of referred otalgia ranging from pathologies of dental, tonsils, oropharynx, hypopharynx, laryngeal origin, temporo- mandibular joint dysfunction^[3]. The ear is considered that the only structure in the body of comparable size that is supplied by sensory nerves from so many different neural segments^[4]. The pain is caused by nerve compression or irritation. In referred pain, the sensation of pain will generally be felt in the somatic dermatome even though the stimuli are from the visceral tissue^[5]. The ear is supplied by four cranial nerves (CN V, VII, IX, and X) and two superior cervical plexus nerves (C2 and C3)^[6]. Among the nerves responsible for referred Otolgia, the most common nerve involved is trigeminal nerve. In Bell's palsy ear pain is considered as referred Otolgia which is by Nervi nervorum of facial nerve^[7]. Sometimes it could be psychogenic or malingering where no organic lesions could be made out.

The purpose of this study is to identify the various possible causes of referred Otolgia and its various characteristics which will help in better evaluation of patients.

Material and Methods

This study was a cross sectional study on patients who had presented to the ENT department in a Medical College Teaching Hospital, central India. Patients complaining of earache with normal ear examination were considered as referred Otolgia.

Complete ear, nose and throat examination with that of head and neck with TM joint was done. Opinion of other specialty like dental and skin were also taken, relevant investigations like imaging, endoscopies and histopathological examination were also performed to reach at a diagnosis. Patients' data including age, sex, affected side and cause of Otolgia were recorded. Obtained data has been analyzed among the epidemiological denominators like age, sex and incidence of various disorders among them.

Statistical analysis: All statistical analyses were performed using version 22 software. $P < 0.05$ was considered as significant

Result

There were 855 patients who had presented to ENT department with ear pain. Of these patients 550 patients had pathology in the ear (64.3%). The remaining 305 patients (35.7%) were analysed. Age ranged from 15-75 years of age. Among them most of the patients were of age group 46 – 60 years as shown in figure 1. Sixty-one percent (61%) of patients were women while 39% were men as shown in figure 2.

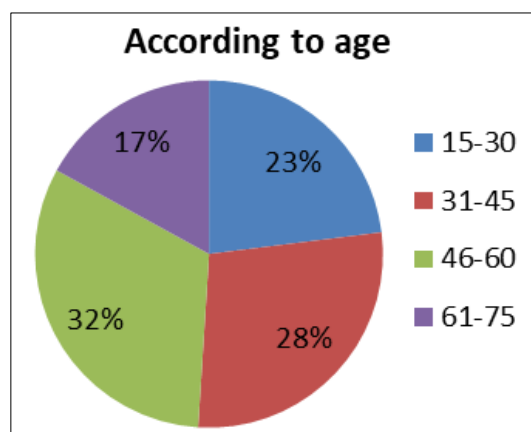


Fig 1: Frequency and percentage of affected patients according to age

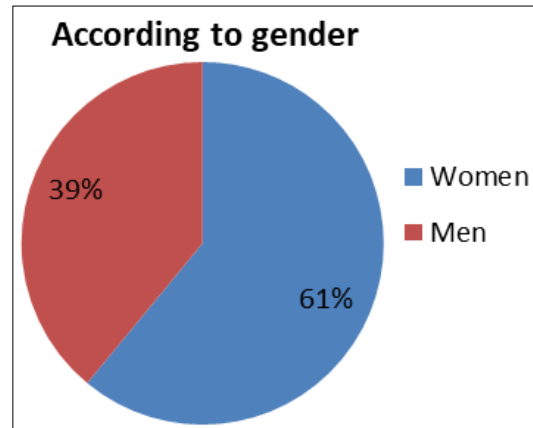


Fig2: Showing Frequency and percentage of affected patients according to gender

Table 1: Distribution of patients according to laterality of ear affected

Side of the Otalgia	No of cases	Percentage (%)
Right	103	33.8%
Left	135	44.2%
Bilateral	67	22.0%

Table 2: Distribution of patients according to Causes of Referred Otalgia

Etiology	Frequency	Percentage (%)
Dental problem	77	25.2%
TMJ problem	70	23.0%
Cervial spine lesion	66	21.6%
Tonsillitis	27	8.9%
Post tonsillectomy	19	6.2%
Pharyngitis	10	3.3%
Sinusitis	7	2.3%
Parotitis	8	2.6%
Eagle's syndrome	6	2.0%
Bell's palsy	4	1.3%
Carcinoma oropharynx	6	2.0%
Psychogenic	4	1.3%

Table 3: Distribution of referred Otalgia in different age groups

Etiology	15-30 yrs	31-45 yrs	46- 60 yrs	>60 yrs
Dental problem	18	32	22	5
TMJ problem	16	26	24	4
Cervial spine lesion	15	22	20	9
Tonsillitis	7	10	8	2
Post tonsillectomy	6	8	4	1
Pharyngitis	3	4	2	1
Sinusitis	1	3	3	0
Parotitis	2	4	1	1
Eagle's syndrome	0	2	3	1
Bell's palsy	1	2	1	0
Carcinoma oropharynx	0	3	2	1
Psychogenic	2	2	0	0
Total	71	118	90	25

Table 4: Distribution of referred Otolgia in both sexes

Etiology	Male	Female
Dental problem	29	48
TMJ problem	27	43
Cervical spine lesion	26	40
Tonsillitis	10	17
Post tonsillectomy	7	12
Pharyngitis	4	6
Sinusitis	3	4
Parotitis	3	5
Eagle's syndrome	2	4
Bell's palsy	2	2
Carcinoma oropharynx	3	3
Psychogenic	2	2

Discussion

In our study, of the patients who had presented with ear pain 35.7% had pathology outside the ear (referred Otolgia). This is in accordance with findings of Kiakojooriet *al.*,^[8], where the incidence of referred otalgia was reported as 30.6%, whereas in other study conducted by Mohammad Hoseinet *al.*,^[9], the incidence of referred otalgia was only 12.2%.

In present study the most common age of presentation was around 46-60 yrs of age, this is consistent with findings of Neilan's *et al.*,^[10] and Rajasekaran V *et al.*,^[11], In study by Mohammad Hoseinet *al.*, the most common age of presentation was 21-35 yrs.

Female predominant (61%) was observed in the current study. similar finding also reported by Kiakojooriet *al.*,^[8] and Mohammad Hoseinet *al.*,^[9]. In study by Kim *et al.*, the incidence was similar in both sexes^[12].

In this study commonest cause for referred otalgia is dental problem (25.2%) which is seen most commonly among the pediatric and early adulthood group. Many other studies like Karmacharya *et al.*,^[13], Kim *et al.*,^[14] and Gaurav Kataria *et al.*,^[15] reported that toothache as etiology of referred otalgia.

The second most common causes of referred Otolgia were Temporo-mandibular dysfunction and cervical spine lesions reported in our study, concordance to the Behnoud *et al.*,^[16] and Sumitha R *et al.*,^[17].

Many other causes of referred Otolgia like: Tonsillitis, Pharyngitis, Sinusitis, Parotitis, Bell's palsy, Carcinoma oropharynx and Psychogenic causes were also reported in our study, accordance to the many other studies^[18-20].

In our study, unilateral otalgia was more common than bilateral otalgia. The left ear is more affected than the right one. This is consistent with other study^[21].

According to our study, the most common nerve responsible for referred otalgia was trigeminal nerve. This is in accordance with Taboo ZA *et al.*,^[22].

Conclusion

Ear pain or Otolgia is an important presenting symptom to ENT clinic with more than one third of those patients having referred pain, the commonest cause of referred Otolgia is dental problem which constitutes about one fourth of cases, most causes of referred Otolgia are related to the trigeminal nerve especially mandibular division, this is may be due to its length and numerous tributaries supplying structures in the head and neck region.

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Conflicts of interest: none

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