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Referred otalgia: epidemiological profile

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ABSTRACT

Background: Otalgia (earache) is one of the commonest presenting complaints of the patients visiting ENT OPD and wide varieties of otological diseases are associated with it. Not only that but surrounding structural pathology of head and neck can at times manifest as otalgia (because of complex innervations of ear) known as referred otalgia.
Methods: This research was carried out on patients visiting ENT OPD complaining of earache. All patients' data including age, sex, complaints, affected ear, findings of ear, nose, throat, head and neck were recorded in proforma. Data were analyzed, primary and referred otalgia was recorded.
Results: Out of hundred patients with otalgia, 31% had referred otalgia of this 54.8% were men and 45.2% were women. Commonest etiology of reoffered otalgia was tonsillitis followed by dental causes. Significant (12.9%) patient had underlying malignancies. 32.2% had right earache while 45.1% had left earache.
Conclusions: A thorough clinical examination of surrounding structures particularly tonsils and teeth should be done as significant number of patient suffered from referred otalgia and while doing this malignancy should be kept in mind as etiology.

Keywords: Earache, Referred otalgia

INTRODUCTION

The ear is unique that there is no structure in the body of comparable size that is supplied by sensory nerves of so many different neural segments (Dalessio, 1972).[1]

Ear receives its sensory supply from cranial nerves V, VII, IX, X and cervical spinal nerves C_2 and C_3.

Otalgia can be either primary (originating from pathologies of ear itself) or secondary (originating from pathologies other than that of ear but sharing the same nerve supply) known as referred otalgia.

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.

In case of not been able to find out cause of pain in ear whether primary otalgia or referred otalgia conclusively after meticulous examination in primary visit, it is advisable to give symptomatic treatment and the patient should be followed up with further investigations to confirm cause of referred otalgia if symptoms persist .

As wide variety of pathologies can cause referred otalgia and late diagnosis can sometime lead to incurable conditions, this study was done to highlight the various causes of referred otalgia and need for looking beyond primary site in case of otalgia.

The study aimed to differentiate various causes of referred otalgia and associate them with epidemiological profile.

METHODS

This study was carried out on patients visiting ENT OPD with earache between periods of January 2002 to January 2004 at municipal corporation hospital, Ahmedabad. Patients complaining of earache with normal ear examination were considered as referred otalgia.

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 investigation like imaging, endoscopies and histo-pathological examination were also performed to reach at a diagnosis.

Patients' data including age, sex, affected side and cause of otalgia were recorded. Obtained data has been analyzed among the epidemiological denominators like age, sex and occupation and incidence of various disorders among them.

RESULTS

In our study out of 100 patients complaining otalgia, 31 suffered from referred otalgia. Among them 54.8% were women while 45.2% were men as shown in Table 1. We found in our study that the commonest cause of referred otalgia was tonsillar pathology (29%) followed by dental lesions (25.8%), other causes were oral pathologies (9.6%), TM joint dysfunction (6.4%), stylgia (3.2%) and pharyngitis (3.2%) as shown in Table 1.

Table 1: Incidence of referred otalgia in terms of sex.

Etiology	Male(%)	Female(%)	Total(%)
Tonsillitis	12.9	16.1	29
Dental	9.7	16.1	25.8
Oral pathology	3.2	6.5	9.7
TM joint	3.2	3.2	6.5
Acute pharyngitis	0	3.2	3.2
Stylgia	0	3.2	3.2
Acute lymphadenitis	0	3.2	3.2
Neuralgic pain	3.2	3.2	6.5
Malignancies	12.9	0	12.9
Total (%)	45.2	54.8	100

Significant numbers of patients (12.9%) were diagnosed to have some malignancies other than that of ear which explains the importance of thorough work up. Maximum number of patient of referred otalgia in age group of 10 to 29 years (42%) followed by above 50 years (32.2%) while lowest incidence was seen in 1st decade between 0 to 9 years (6.5%) as shown in Table 2. It was also noted that among all the patient of referred otalgia left ear was more involved (45.2%) while 22.5% patient had bilateral referred pain as shown in Table 3.

Table 2: Referred otalgia in terms of age group (%).

Etiology/Age groups	0-9	10-29	30-49	50-75
Tonsillitis	6.5	19.4	3.2	0
Dental	0	6.5	6.5	12.9
Oral pathology	0	6.5	3.2	0
TM joint	0	3.2	3.2	0
Acute pharyngitis	0	3.2	0	0
Stylgia	0	0	0	3.2
Acute lymphadenitis	0	3.2	0	0
Neuralgic pain	0	0	3.2	3.2
Malignancies	0	0	0	12.9
Total (%)	6.5	42	19.3	32.2

Table 3: Incidence of referred otalgia in terms of affected side.

Etiology	Right(%)	Left(%)	Bilateral(%)
Tonsillitis	9.7	6.5	12.9
Dental	9.7	16.1	0
Oral pathology	3.2	6.5	0
TM joint	0	3.2	3.2
Acute pharyngitis	0	0	3.2
Stylgia	0	3.2	0
Acute lymphadenitis	0	0	3.2
Neuralgic pain	3.2	3.2	0
Malignancies	6.5	6.5	0
Total	32.3%	45.2%	22.5%

DISCUSSION

Otalgia is disturbing condition in all ages of patients, moreover many pathologies outside of ear can cause earache and at times this may be the only complaint of the patient and those conditions sometimes may be serious one, so while dealing with the patient of otalgia one need to do thorough clinical examination, necessary investigation and sometimes help of other specialties. Referred otalgia is considered when patient complaining of earache but patient has normal ear on examination.

We have found that in our study 31% patients had referred otalgia which is almost same as the study of Benhood et al in Hamedan, Iraq(30.6%).[2] While higher incidence (46%) was observed by Kiakojoori K, Tavakoli HR in Shahid Beheshti Hospital, Babol, Iraq.[3]

In our study children less than 10 years age group was the least affected group with only 6.5% and all among them had tonsillitis as a cause for referred otalgia. Neilan's study also found that children suffer more from primary otalgia while more number of adults had referred otalgia which is consistent with our study.[4] But in study by Mohammad Hosain Taziki, Golestan Uni, Gorgan, Iraq, reffered otalgia were common in children.[5]

We found that in our study commonest cause for referred otalgia is tonsillar lesions (29%) which is seen most commonly among the pediatric and early adulthood group and as a cause of bilateral referred otalgia followed by dental pathology (25.8%) including toothache having its highest incidence in more than 50 years age group and oral lesions of benign nature like oral ulceration and trauma is noted in 9.6% cases with maximum number of cases seen in second decade. While in study by Mohhamad Hosain Taziki, toothache (62.8%) was commonest followed by pharyngitis (24.5%).[5] In Kiakojori's study 45% had toothache as etiology of reffered otalgia.[3] While dental cause amounted to be 50% in Kim's study.[6]

Temporo mandibular joint disorder was the most frequent cause in Benhoud et al study but in our study temporo mandibular joint disorder causing referred otalgia is noted in only 6.5 % with equal distribution in both sex and higher incidence during active adulthood years.[2]

In our study we had 12.9% cases of malignancy like malignancy of tongue base or supraglottic region and all the cases of malignancy are noted in age group above 50 years while Kiakojori et al study had pharyngeal Ca in 6% of cases.[3]

CONCLUSIONS

In our study more than 30% patients had referred otalgia with equal distribution in both gender which also correlates with other studies, that underlies the point of thorough clinical examination one should pay attention to oropharynx, dental and head and neck regions to find out the etiology. Referred otalgia in second decade is mostly associated with infective causes of oropharynx or oral cavity while in old age it is mostly caused by malignancy of head and neck region. Otalgia can sometimes be the only presenting complaint of the patient having early malignancy (particularly old age men with history of addiction) it must be considered as one of the possibility.

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