

Referred otalgia:evaluation of causes

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Abstract

Otalgia is the sensation of pain in the ear,while referred otalgia is pain felt in the ear but originating from non-otological source.Ear pain is a diagnostic problem when examination of the ear shows no pathology. A prospective study was conducted in E.N.T . private clinics in Kirkuk city from October 2007 to December 2008. Age , sex and causes of referred otalgia were noted. During the study period 210 patients were evaluated , out of 210 patients 122 male "58%" and 88 females "42%", Tonsillitis,pharyngitis and post tonsillectomy were the commonest cause"51.4%". Three patients had malignancy of upper aerodigestive tract and referred otalgia was one of its main symptoms. Referred ear pain is more commonly caused by tonsillitis , pharyngitis but it may be first symptom of head and neck malignancy.

ألم الأذن الرجيع

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المستخلص

ألم الأذن هو احساس بالألم في الأذن لكن ألم الأذن الرجيع هو احساس بالألم في داخل الأذن بينما مصدره من خارج الأذن. يخلق ألم الأذن مشكلة في التشخيص عندما لا نجد في الفحص أية حالة مرضية في الأذن. صممت هذه الدراسة المقطعية في العيادات الخاصة بالأنف والأذن والحنجرة في مدينة كركوك. خلال الفترة من تشرين الأول ٢٠٠٧ إلى كانون الأول ٢٠٠٨ تم ملاحظة العمر والجنس وأسباب الألم الرجيع. خلال فترة الدراسة تم تقييم مائتان وعشرة مريضاً منهم (٢٢) ٥٨% ذكور و(٨٨) ٤٢% إناث. التهاب اللوزتين والبلعوم والم بعد استئصال اللوزتين كانت من الأسباب الرئيسية ٥١%. ثلاث مرضى مصابين بأورام في البلعوم والحنجرة وكان ألم الأذن الرجيع أحد أهم الأعراض عندهم. يستنتج من هذه الدراسة أن أكثر أسباب ألم الأذن الرجيع هو التهاب اللوزتين والبلعوم لكن ممكن أن يكون أول عرض لأورام الراس والرقبة.

Introduction

Otalgia is the sensation of pain in the ear, while referred otalgia is pain felt in the ear but originating from a non otological source (1). The rich sensory innervation of the ear derives from four cranial nerves and two cervical nerves which also supply other areas in the head, neck, thorax and abdomen⁽¹⁾. Otalgia nevertheless, can be dispiriting symptoms for both patient and physician when enthusiastic search for a primary otological cause reveals no pathology. This type of otalgia is said to be "referred" from another site and always deserves a thorough evaluation⁽²⁾. Referred otalgia can be likened to an "alarm bell" signaling a head and neck ailment often of a benign nature, yet, it may be the earliest warning of a veiled malignancy⁽³⁾. The aim of this study is to identify the main causes of referred otalgia in our practice.

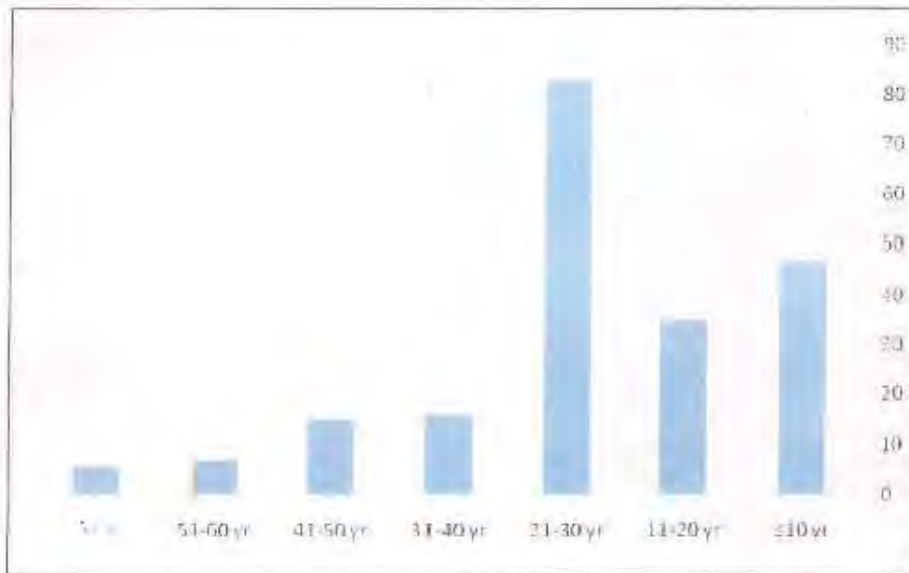
Patients and methods

A total of 210 patients "122 males, 88 females" from different age groups complain from otalgia had consulted the ear, nose and throat private clinics in Kirkuk city. All patients were included in a prospective study conducted between October 2007 and December 2008. A history was obtained and physical examination was performed, including complete head and neck examination and fiberoptic nasopharyngolaryngoscopy. Investigations were done including radiological examination "T.M.J., and CTscan", endoscopy and biopsy to confirm the diagnosis. plain-x-ray of the sinuses and Patients with dental problems or cervical problems send for dentist and rheumatologist

respectively. All patients had primary ear pathology were excluded from this study.

Results

Out of 210 patients 165 patients "78.5%" were below 30 years. After the age of 30 years the number of patients decrease up to age above 60 years where decrease to a percentage "2.8%" as shown in figure 1



Fig(1):- number of cases according to age groups of patients

In this study male were 122"58%" and female were 88"42%" as show figure.(2)



Fig.(2):- percentage of cases according to sex of patients.

Different causes noted in this study are shown in table 1. Tonsillitis and pharyngitis were the commonest cause "51,4%" followed by post tonsill –

ectomy . Three patients "1,4%" had malignancy and mainly complaining of otalgia.

Table(1):- Causes of referred otalgia according to age distribution.

Diagnosis	Age ≤10	11-20yr	21-30yr	31-40yr	41-50yr	51-60yr	>60yr
Post tonsillectomy	28	21	26	2	-	-	-
Tonsillitis	8	7	30	2	2	-	-
Pharyngitis	8	4	20	5	1	-	-
Sinusitis	1	3	5	1	1	-	-
Dental problem	2	-	2	5	8	4	4
Cervical spine lesion	-	-	1	1	2	2	2
Ca. of larynx	-	-	-	-	1	1	-
Carcinoma of hypopharynx	-	-	-	-	1	-	-

Discussion

The ear is exceptionally well innervated⁽⁴⁾. Referred otalgia is a challenging symptoms, with burden on the physician to identify the source. Only by careful patient history and physical examination can all causes in this extensive differential diagnosis be excluded⁽⁵⁾. This study reveals the patients above 10 years more than the patients below 10 years. The patients above 10 years were "77.6%" while patients below 10 years were only "22.4%". This finding was similar to that Nafi and Marwan 2002⁽⁶⁾ and Al-Sheikhli⁽⁷⁾. In this study the male complained from referred otalgia more than female. The male represented "58%" while the female patients "42%", but this finding was different from Al-Sheikhli⁽⁷⁾ where he stated that female with referred otalgia were "68%", and males complaining referred otalgia were "32%". This study revealed the main cause of referred otalgia below 10 years were

tonsillitis, pharyngitis and post tonsillectomy "21.9%". This result agreed with Ijatucla⁽⁸⁾ who found that tonsillitis form the major cause of referred pain constituting about "21%". This may be explained by the fact that tonsillar infection and tonsillectomy operation occur in childhood more than in adult. Dental problem "TMJ dysfunction, impacted wisdom teeth and dental sepsis" more common in female than male. This agree with Brookes, Maw, Coleman 1980⁽⁹⁾. Their study on 45 patient with T.M.J dysfunction, they found the majority of patients "82.2%" had otalgia. This may be explained by the fact that female asks dental advice more frequently than male. A less obvious musculo-skeletal cause of dull earache or post auricular pain, is referred occipital nerves root irritation from cervical osteo-arthritis. This occur more commonly in middle aged or elderly patients⁽¹⁰⁾ this agree with our study that patients complain of otalgia

between age 31-60 years old age. Other less common causes of referred otalgia was sinonasal lesions 5.2% in our study. The most important cause of persistent otalgia with normal ear is an underlying malignancy. The site may be easily visible (tonsil, posterior tongue-9th cranial nerve) but more often is hidden" naso-pharynx, hypopharynx and larynx -5th,9th,10th cranial nerves". This situation give rise to the adage "beware the patient with a hoarse voice and cotton wool in the ear "which high lights the association between a laryngeal, hypopharyngeal tumour and referred otalgia (11). Three cases of cancer were included in our study, two cases of laryngeal cancer and one case of hypopharyngeal cancer. This similar to Nafi and Marwan study 2002(6).

Conclusions

- Tonsillitis, posttonsillectomy and dental problems are most common causes.
- Ear pain may be first symptom of head and neck malignancy.
- There are many other causes of referred otalgia might not be included in our study.

Recommendation

Any patient complain of otalgia with risk factors for an aerodigestive neoplasm and a normal ear examination require a complete otolaryngological examination.

References

1-Rareshide EH, Amedee RG. Referred otalgia: a structured approach to diagnosis and treatment. *Int J Clin Pract.* 2007 Jun; 61(6):1015-21.

2-Jaber James J, Leonetti I, John P, Lawrason Amy E, Paul J. *Otolaryngology and head and neck surgery* 2008; vol. 138(4) : 479-485.

3-Olsen K. D. The many causes of otalgia. Infection, trauma, cancer. *Postgrad Med.* 1986 Nov 1;80(6):50-2, 55-6, 61-3.

4-Reiss M, Reiss G. Differential diagnosis of otalgia. *Wien Med Wochenschr.* 2002;152(23-24):613-7.

5-Yangisawa K. Referred otalgia. *Am J Otolaryngol.* 1992-NOV; 13(6) 323-7((MEDLINE)).

6-Nafi M S, Marwan F B. Otalgia, epidemiological study in the north of Iraq. Thesis for the fellowship of the Iraqi commission for medical specialization of otolaryngology. 2002 Feb; (149):45-48.

7-AL-sheikhili ARJ. Pain in the ear with special reference to referred pain. *The journal of laryngology and otology* 1980 Dec;94:1433-1441.

8-Ijaduola TG. Acute otalgia in Nigerian children. *Trop Geogr Med* 1985 Dec;37(4):343-344((MEDLINE)).

9-Brookes G, Maw AR, Coleman MJ. "Costens syndrome" correlation or coincidence: review of 45 patients with temporomandibular joint dysfunction, otalgia and other aural symptoms. *Clin. Otolaryngology* 1980;5:23-27.

10- Biseinger E, Heiden C. Earache and functional disorders of the cervical spine. *HNO* 1994 Apr;42(4):207-213.((MEDLINE)).

11-De Bondt et al. Referred earache, an important symptom of the head and neck cancer. *Ned Tijdschr Geneesk* 1998, Aug; 142(31):1753-1756. ((MEDLINE)).