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A STUDY ON CLINICAL PROFIL OF OTOGENIC AND NON OTOGENIC OTALGIA: A PROSPECTIVE STUDY OF 157 CASES

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ABSTRACT

Background: Otalgia is defined as ear pain. It is a recurrent symptom at consultations due to the complexity of the sensory innervation of the ear as well as the diversity of pain mechanisms. In this context, a retrospective study, spread over 10 months (from January 25, 2022 to November 18, 2022) was conducted at the level of the ENT department of the Mohamed V Military Hospital in Rabat (Morocco). The epidemiological, clinical and etiological profiles were studied during this study.
Methods: This study included 157 patients. Out of this population, 97 (62%) were female versus 60 (38%) male patients. The age average of the patients was 38.29 years with extremes ranging from 3 to 80 years. Otogenic otalgia was the most common (65%). Chronic otitis was the most frequent pathology of otodynia (35%) followed by earwax plug (24%) then otitis externa (16%) as well as other pathologies: auricular blast 7%, foreign body of the CAE 7%, perichondritis 4%, otitis cholesteatomatosis 3%, seromucous otitis 3%, ear trauma 1%.
Results: Referred or secondary otalgia, which is an earache caused by external factors, accounted for 34% of the sample. Temporomandibular joint dysfunction was the most frequent (30%) in this type of otalgia, followed by angina (24%), then cervical lymphadenopathy (15%), goiter (9%), cavum cancer (9%), GERD (9%), chronic pharyngitis (7%), parotid tumor (5%), parotitis (2%), Herpes zoster Oticus (2%), osteoarthrosis (2%), cervicobrachial neuralgia (2%) and finally the SHARP syndrome (2%).
Conclusions: This study has shown that otalgia is not always of otological origin but can also be of nonotological origin. Following this result, we recommend that our colleagues should always examine the TMJ, the teeth as well as the entire head and neck region after having identified the otalgia through a normal otological examination.

KEYWORDS

Referred otalgia, Chronic otitis media, Temporomandibular joint dysfunction

MAIN ARTICLE

INTRODUCTION

The International Association for the Study of Pain (IASP) has defined pain as "an unpleasant sensory and emotional experience, associated with actual or virtual tissue damage, or described in terms of a such damage".

A painful manifestation localized to the level of the ear is called otalgia. It is common but indiscriminate; people of all ages can be affected with a prevalence of almost 100% [1].

An otological examination can frequently identify the cause of the earache. Most of the time the underlying cause is from the ear which is referred as primary otalgia. Common causes of primary otalgia include otitis media, otitis externa, earwax impaction, myringitis, and neoplasm [2].

On the other hand, there are quite a number of causes that can present as otalgia and the ear looks normal in otoscopy. In this case, earache can be caused by oral pathologies, cervical lymphadenopathy, arthritis of the cervical spine, pharyngitis or tonsillitis and even biomechanical problems of the temporomandibular joints [2]. These are called secondary or referred otalgia.

A complex neural network innervates the ear as a result of complex embryological development. This rich and complex innervation poses a challenge to identify the diagnosis responsible for this otalgia [1].

This purpose of the study is to identify the various possible otogenic and non otogenic causes and its various characteristics which will help the evaluation of patients.

MATERIEL AND METHODS

This study was a retrospective descriptive study on 157 patients with otalgia who had presented to the ENT department, Military Training Hospital Mohamed V, Rabat, with otalgia between January 25 to November 18, 2022.

Of the patients who presented with otalgia (157), 66% of them had otogenic causes. The patients who had non otogenic causes (34%) were included in the study, also patients with otalgia following ear damage; patients with referred otalgia secondary to pathology outside the ear and patients hospitalized in the ENT department for otalgia

The distribution of various etiologies in these patients were categorised and tabulated. The data regarding the age, the sex distribution, the topography, the symptom onset, the type, and the affected area were collected and tabulated.

RESULTS

There were 157 patients who had presented to ENT department with ear pain. Of these patients 103 patients had pathology in the ear (66%). The remaining 54 patients (34%) were analysed.

The most common otogenic cause was found to be the chronic otitis media (35%), It was subsequently noted that earwax comes in second place with 24% of patients followed by 16% of patients with otitis externa. Other causes were EAC foreign bodies (7%), atrial blasts (7%), perichondritis (4%), cholesteatoma (3%), seromucous otitis (3%), ear trauma 1%, Herpes zoster Oticus 1% and ear eczema 1%. (Table 1)

Table 1: Causes of otogenic otalgia.

Etiology	No. of cases (n)	Percentage (%)
Chronic otitis media	36	35
Earwax	24	24
Otitis externa	16	16
EAC foreign bodies	7	7
Atrial blasts	7	7
Perichondritis	4	4
Cholesteatoma	3	3
Seromucous otitis	3	3
Ear trauma	1	1
Herpes zoster Oticus	1	1
Ear eczema	1	1

Non otogenic causes was found to be temporomandibular dysfunction (30%). Other causes in descending order of frequency were acute tonsillitis (24%), Cervical lymphadenopathy

(15%), goiter as well as nasopharyngeal cancer and the Gastro-oesophageal reflux disease (GORD) (9%), pharyngitis (9%), parotid swelling (6%), cervical spondylosis (6%), parotitis (2%). (Table 2)

Table 2: Causes of non otogenic otalgia

Etiology	No. of cases (n)	Percentage (%)
Temporomandibular dysfunction	16	30
Acute tonsillitis	13	24
Cervical lymphadenopathy	8	15
Goiter/nasopharyngeal cancer/ GORD	5	9
Pharyngitis	5	9
Parotid swelling	3	6
Cervical spondylosis	3	6
Parotitis	1	2

The distribution of patients according to age groups showed a high frequency estimated at 46.50% for adults over 40 years of age, for those aged between 21 and 40 years old (30.57%), then 15.92% for those aged between 10 and 20 years old, only 7.01% cases were reported in paediatric age group (under10 years old), with an average age of 38.29. (Table 3)

Table 3: Distribution of age groups.

Age group (yrs)	No. of cases (n)	Percentage (%)
> 40	73	46.50
21 - 40	48	30.57
10 - 20	25	15.92
< 10	11	7.01

In our study, 62% of our patients were female versus 38% were male, the M/F sex ratio was 0.61. (Table 4)

Table 4: Distribution of otogenic and non otogenic otalgia in both sex

	No. of cases	Percentage (%)
Males	60	38
Females	97	62

Most patients had unilateral ear pain. There was no predilection for any side. In this study, 44% of patients had otalgia in the left ear and 33% for patients with earache in the right ear. While 23% of patients had bilateral otalgia. (Table 5)

Table 5: Distribution of cases in terms of laterality

Laterality	Percentage (%)	No. of cases
Bilateral	23%	36
Unilateral- right	33%	52
Bilateral- left	44%	69

The circumstance of onset is mainly progressive with a percentage of 55%, while 45% of patients suffered from a sudden onset.

DISCUSSION

The most common cause of ear pain was otalgic causes with 66%. The referred pain was most commonly due to temporomandibular dysfunction. The most common age of presentation was over 40 years of age where acute tonsillitis was the most common cause followed by temporomandibular dysfunction. This is consistent with findings of Gandhi & al. [5] and Anwar & al. [4] who noted respectively 69% otogenic otalgia, 31% referred otalgia and 66.67% otogenic otalic, 33.33% of secondary otalgia.

The study by Taziki & al. [3] presents different percentages with 87.8% otodynia and 12.2% referred otalgia. Nevertheless, the figures remain consistent with our study with a strong predominance of otodynia.

	Otogenic otalgia	Non otogenic otalgia
Gandhi & al.	69%	31%
Anwar & al.	66.67%	33.33%
Taziki & al.	87.8%	12.2%
Our study	66%	34%

Larger samples have been collected by Taziki & al. [76] as well as Anwar & al. [77] with respectively 770 cases over two years of study and 450 cases over 6 months of study. On the other hand, Gandhi & al. [78] collected 100 cases over 2 years.

Study	Taziki & al.	Anwar & al.	Gandhi & al.	Our study
No. of cases	770	450	100	157

In our study the most common age of presentation was over 40 yrs of age and only 11 cases were reported in children, with an average age of 38.29, in study by Anwar & al
the most common age of presentation was 29.15.

According to our study, the most common otogenic etiology is chronic otitis media with a percentage of 35% of patients. A result that is consistent with the literature since Anwar & al. [4] noted in his study that 60.6% of patients presented with chronic otitis media.
In our study, the most frequent etiology of referred otalgia was found to be temporomandibular dysfunction (30%), acute tonsillitis (24%), and cervical lymphadenopathy (15%). In study by Tazaki & al. [3] toothache was the most common cause of the referred otalgia (62.8%), In Gandhi & al. [5] and Anwar & al. [4] studies both found that the most frequent etiology was reported to be tonsillar pathology as well as dental lesions.
In our study, unilateral otalgia was more common than bilateral otalgia. There was no difference between both sides. This is consistent with other studies. [3,5]

CONCLUSION

In this study the most common cause is chronic otitis media followed by odontogenic. Careful detailed evaluation of the patient should be done to identify the exact underlying cause and treat effectively.

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