ORIGINAL ARTICLE

Incidence and clinical presentation of masses in external auditory canal

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Abstract:

Objective: To determine the incidence and clinical presentation of masses in external auditory canal.

Study Design: Cross-sectional study.

Setting: Department of Ear, Nose and throat (ENT), Head and Neck Surgery, Dow University Health Sciences and Civil Hospital, Karachi from December 2014 to December2015.

Patients & Methods: A cross-sectional study was carried out in ENT Department, DUHS and CHK, Karachi, on patients coming in ENT OPD and ward with ear problems like ear discharge, deafness, visible mass in external auditory canal (EAC),etc. Demographic data and personal information of patients were recorded. Variables like gender and age of the patients were included. Different clinical presentations of patients with masses in EAC were studied.

Results: Out of total 1,000 patients, patients who presented with mass in EAC were 31. Regarding the different clinical presentations, commonest was ear fullness, followed by deafness, otorrhoea and otalgia.

Conclusion: Masses in EAC are rare in our ENT practice. However, their pathology and presentation is varied. More studies are needed to study such cases to determine the local pattern more accurately.

Key words: Masses, external auditory canal, otorrhoea, otalgia incidence, clinical presentation, aural polyp, cholesteatoma, neurofibroma, paraganglioma**.**

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Introduction:

Lesions for external auditory canal (EAC) are disease entities frequently encountered by the otorhiolaryngologist.[1-5] These disorders range in complexity from simple impaction of wax to neoplasia of temporal bone. Common space occupying lesions like wax (cerumen), fungal ball (Otomycosis) and foreign bodies (FBs) are excluded from the study to put more stress on other pathological masses encountered.[6-12] Truly speaking, not much research work on this topic has been done. Especially local medical literature is lacking on this area of research.[2,3,5]

Masses in EAC, e.g., exostoses, keratocysts, EACcholesteatoma (EACC), ceruminoma and neurofibroma, are fortunately rarely encountered.[13-17] Among the masses in EAC, the most common pathology encountered is aural polyp i.e., inflammatory polyp; most often, they arise from the middle ear as a result of chronic suppurative otitis media (CSOM), rarely they can arise from the wall of EAC.

Other benign masses which are encountered are EACC, granulation tissues, exostoses, osteoma of EAC, rare entities like ceruminoma (hidradenoma), plexiform neurofibroma and paraganglioma.[1,8,12,15] The patients with mass in EAC present with different ear symptoms and presentations like ear discharge, otalgia, aural fullness, visible mass in ear canal, facial palsy and tinnitus.[13, 14,16]

Theobjective of this study was to determine the incidence of masses in EAC in ear patients com-

Table I: *Different pathological entities encountered as masses in external auditory canal*

1.	Aural Polyp (Inflammatory Polyp)	12
2.	Granulation tissue	04
3.	Osteoma	02
4.	Kevatosis	01
5.	Kerato cyst	01
6.	Cholesteatoma / EACC	01
7.	Neurofibroma	01
8.	Carcinoma	01
9.	Paraganglioma	01
10.	SCC of temporal region	02
11.	Rhabdomyosarcoma	02

Table II: *Different clinical presentations of masses in external auditory canalandtheir frequency*

S. No	Clinical Presentation	No of Cases out of 31	%age
1	Ear Discharge	09	29%
2.	Pain in Ear	09	29%
3.	Visible mass in EAC	07	22.5%
4.	Aural Fullness	04	12.9%
5.	Facial Palsy	01	3.2%
6.	Tinnitus	01	3.2%

ing to ENT Department, CHK and to analyze different clinical presentations with which these presented.

Patients and Methods:

The study was conducted at Department of ENT, Head and Neck Surgery, Dow University of Health Sciences (DUHS) and Civil Hospital, Karachi (CHK). Sample size of 1000 patients was taken; out of which patients coming with mass or space occupying lesion in EAC were selected to calculate the incidence. The study period was from December 2014 to December 2015. All the cases which were admitted, bearing mass in EAC, underwent surgery for extirpation of pathological mass; in all cases the final diagnosis was based on histopathological evaluation of the biopsied tissue after surgical clearance and discharge from hospital. All the patients did not come for a regular follow up. Inclusion criteria included patients with complains of fullness of ear, patients with discharging ear, visible mass in the ear and this included patients with either gender and of any age. Patients with congenital ear anomaly, permanent hearing loss, operated ear, patients with otomcycosis, FBs, and wax (cerumen) were excluded.

All patients coming to ENT Department, CHK via OPD after meeting the inclusion criteria were included in the study. Detailed history was taken and through clinical examination including otoscopic examination, tuning fork tests and cranial nerves assessment were done. Relevant routine investigations were done like, complete blood count (CBC), erythrocyte sedimentation rate (ESR) and international normalized ratio (INR). Specific investigations like aural pus culture and senstivity in case of discharging ear, Pure Tone Audiometry (PTA) in case of hearing impairment, X-ray mastoids, angiography in certain cases e.g., in patients with pulsatile tinnitus, examination under microscope (EUM) and histopathological evaluation of the biopsied tissue of mass extirpated from EAC, were carried out, as appropriate.

The details of the patients complaints, findings and investigation reports were recorded on a preformed proforma.

Statistical analysis:

Data was analyzed by using SPSS version 10.0. Incidence was computed for masses in EAC. Frequency of different clinical presentations of these masses was found with regard to gender and histopathological findings, while quantitative variables like age, duration of symptoms etc were computed for presentation by means and standard deviation.

Results:

A total number of 1000 patients were studied who were coming to ENT OPD and ward, CHK during the study period of 1 year with ear problems. Among these, cases bearing masses in EAC were 31 cases, amounting to an incidence of 31/1000= 3.1%. Out of 31 cases, 16 patients were male and 15 were females. The male to female ratio was 1.06: 1. Majority of cases, 26/31 belonged to age >15 years. Only 5/31 cases were seen in young children (≤15 years).

Different pathological entities were encountered among the masses in EAC. These are

shown in Table 1. The most common pathological entity found was the aural polyp. It is usually the inflammatory polyp, arising from the middle ear mucosa in cases of CSOM but presenting in EAC. Second most common entity was granulation tissue of CSOM. If is usually associated with cholesteatoma. Some rare entities like ceruminoma, plexiform neurofibroma and paraganglioma were also found and treated according to the pathology and extent. Regarding the clinical presentations, these were equally varied and are shown in Table 2. The two most common presenting complains were otorrhoea and otalgia. Other complains were hearing impairment, visible mass in ear, fullness of ear, etc. Interestingly, one patient had malignancy of temporal region, presenting with mass in EAC along with ipsilateral facial nerve palsy. One patient came with pulsatile tinnitus with visible mass in EAC which was diagnosed later on as a case of paraganglioma or chemodectoma.

Discussion:

Masses in EAC are not frequently reported to otorhinolaryngologist. According to the study carried out in our setup of ENT-Head & Neck Department of DUHS, CHK, the incidence of such masses was 31/1000 i.e 3.1%, because, common conditions like wax, FBs in ear and otomycosis were excluded from the study.

Different pathological entities which were encountered after extirpating the masses and their histopathological evaluation included inflammatory aural polyp, granulation tissue, osteoma, keratosis, squamous cell carcinoma (SCC) of temporal region, rhabdomyosarcoma, plexiform neurofibroma, ceruminoma (hidradenoma), cholesteatoma (EACC) and keratocyst etc.[1-5, 7-9, 14, 16,17] These masses presented clinically with different signs and symptoms which in order of decreasing frequency were; otorrhoea, otalgia, visible mass in EAC, aural fullness, hearing impairment, facial nerve palsy and palpable tinnitus. The majority of the lesions were found in adult patients. Only five cases were encountered in children. Gender incidence was almost equal in both sexes. In this cross-sectional study, the most common pathological entity encountered among masses in EAC was inflammatory aural polyp which arises from the middle ear mucosa in cases of CSOM but presents as a polypoidal mass in EAC.

The next common pathology determined was the granulation tissue which also appears in cases of CSOM and is usually associated with cholesteatoma. Other entities found in EAC were EACC, keratosis, osteoma, keratocyst, paraganglioma, and SCC of temporal region. All these diagnosis were established after fully preparing the patients and planning the surgical technique according to pathology and its extent.

There is very little data available on this topic in local and international literature. We would continue our research on this line and collect more cases and to do more research on other aspects of the same problem.

Conclusion:

The masses or space occupying lesions in EAC are rare in ENT practice. However, their presentation and nature is varied and it is essential that otorhinolaryngologist is familiar with these.

Conflict of Interest: None

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Role and contribution of authors:

Dr. Syeda Tehmina Junaid, Senior RMO, Deptt of ENT Head and Neck Surgery, DUHS CHK, did major contribution to conception and design of work. Major part in collecting the data and final approval of the version to be published and drafted the work revised it critically for important intellectual content

Dr Tarique Zahid Khan, FCPS, Assistant Professor, Dept of ENT Head and Neck Surgery DUHS CHK, did collector and also analysed the data

Dr Zeba Ahmed, FCPS, Associate Professor
Dept of ENT Head and Neck surgery, DUHS CHK, data collector, the manuscript submission, peer review, publication process, and

ensures that all the journal's administrative requirements

Dr Syed Iqbal Hussain, Associate Professor, Dept of ENT Head and Neck surgery, DUHS CHK, critically analysed the data.

Dr Iqbal A Muhammad Khyani, Associate Professor, Dept of ENT Head and Neck surgery, DUHS CHK, critically analysed the data.

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