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ORIGINAL RESEARCH

Clinical and Histopathological Study of Mass in Ear

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Abstract
Background: *To study clinical and histopathological diagnosis of mass in ear.*
Materials & methods: *A total of 30 subjects were enrolled. The subjects were admitted with complaint of mass in ear. For histopathological examination, the incision and excision biopsy was performed in such cases. Data was collected and results were analysed using SPSS software.*
Results: *Lesions of Ear are widely distributed amongst all subjects. Out of 30 subjects, inflammatory polyp was the most common lesion found in 48% cases followed by Cholesteatoma in 29% and non-specific inflammations was 10%.*
Conclusion: *Inflammatory polyp was the most common lesion and all lesions were more common in males than females.*
Keywords: *Cholesteatoma, Squamous cell carcinoma.*

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Introduction

A number of diseases can involve the ear and some of these can pose special problems at this site. [1] They rarely cause mortality but quality of life is definitely affected. The ear can be divided into external, middle and inner segments. [2]Aural polyps are non-cancerous, fleshy growths in the outer ear canal or eardrum. They can also arise from middle ear. Polyps usually arise from constant irritation of the ear canal or eardrum. External ear infections, called chronic otitis externa, are the most common cause of this irritation. [3,4]

Squamous cell carcinoma (SCC) of the external auditory canal (EAC) was contrasted to the external ear (pinna). [5] EAC SCCs are rare, affecting only about 1 in a million population per year, showing a female predominance, distinctly different from pinna tumors which are more common in men. [6,7] Chronic inflammation (otitis media or externa) and radiation treatment specifically for nasopharyngeal tumors, are considered in the etiology for EAC SCCs, quite different from sun exposure or frostbite in the development of pinna carcinomas. [8,9] Rarely, transformation from papilloma into carcinoma may be seen. [10] Pain, otitis (externa or media), and hearing changes bring the patients to seek clinical attention, with nerve symptoms late in the disease course. [11,12]Cholesteatoma is a misnomer as it contains no "cholesterol" and it is not a true "neoplasm".[13] However, it simulates a neoplasm clinically with a propensity to destroy surrounding tissues (including bone) and to recur after excision. Due to negative pressure and Eustachian tube dysfunction, there is an accumulation of desquamated keratin, which results in obstruction. Trapped bacteria cause infection, resulting in increased inflammatory cells, with release of cytokines, causing epithelial proliferation. Collagenase production by the squamous epithelium causes bone destruction. [14,15] The cystic cavity is filled with keratinous debris, lined by keratinizing squamous epithelium, which is abnormal in this site. Acquired and congenital forms of cholesteatoma are recognized. There are about 15 cases/100,000 in the population, with a slight male predominance. Congenital forms affect male infants, with acquired forms affecting mainly young adults. [16] Acquired cholesteatoma is usually due to recurrent otitis media, which may result in a perforated ear drum (tympanic membrane). [17] Hence, this study was conducted to study clinical and histopathological diagnosis of mass in ear.

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Materials & methods

A total of 30 subjects were enrolled. The subjects were admitted with complaint of mass in ear. For histopathological examination, the incision and excision biopsy was performed in such cases. The slides were prepared and stained by Hematoxylin and Eosin stain and examined under microscope. Special Staining was done wherever required. Data was collected and results were analysed using SPSS software.

Results

A total of 30 subjects were enrolled. Lesions of Ear are widely distributed amongst all subjects. Out of 30 subjects, inflammatory polyp was the most common lesion found in 48% cases followed by Cholesteatoma in 29% and non-specific inflammations was 10%. The frequency for abscess and nevus was 3 and 2 % respectively. Whereas, the frequency for squamous cell carcinoma was 8%. According to sex-wise distribution of lesions, 18 were males and 12 were females. Males were affected more than females for overall lesions.

Table 1: Frequency of distribution of various lesions

Lesions	Frequency
Inflammatory polyp	48%
Cholesteatoma	29%
Non specific inflammations	10%
Abscess	3%
Squamous cell carcinoma	8%
Nevus	2%

Table 2: Sex-wise distribution of lesions

Lesions	Males affected	Females affected
Inflammatory polyp	9	6
Cholesteatoma	2	2
Non specific inflammations	4	0
Abscess	0	1
Squamous cell carcinoma	3	2
Nevus	0	1
Total	18	12

Polyp was clinically seen as mass in external ear canal/polypoidal mass with pain and discharge and on histopathological diagnosis, it was diagnosed as inflammatory polyp. Whereas, cholesteatoma was seen as cystic mass in ear with discharge (white cheesy material from external ear canal).

Discussion

Most lesions of ear presented either as middle ear mass protruding into external ear canal or mass on auricle (ear pinna). Symptoms included mass with sero-sanguinous or blood stained discharge with pain in the ear and sensitive to touch. Polyps presented as mass protruding into external auditory canal with history of pain and discharge. Polyps are significant for two reasons. First, they say something about the severity and duration of middle ear inflammation. Secondly, in addition to the perforated eardrum, they can cause hearing loss, dizziness, ear pain and chronic drainage from the ear. [4]Grossly, they are soft to firm in consistency with microscopic appearance of polypoidal accumulation of granulation tissue. They are composed of loose edematous well vascularized stroma diffusely infiltrated with inflammatory cells specially lymphocytes and plasma cells. They may be covered by squamous or modified respiratory epithelium. [18]Hence, this study was conducted to study clinical and histopathological diagnosis of mass in ear.

In the present study, a total of 30 subjects were enrolled. Lesions of ear are widely distributed amongst all subjects. Out of 30 subjects, inflammatory polyp was the most common lesion found in 48% cases followed by Cholesteatoma in 29% and non-specific inflammations was 10%. The frequency for abscess and nevus was 3 and 2 % respectively. Whereas, the frequency for squamous cell carcinoma was 8%. A study by Agarwal NM et al, clinical diagnosis was in most but not all cases consistent with the histo-pathological diagnosis. A study of 50 patients, attending Ear, Nose and Throat department, was done and specimens were collected from them and subjected to histopathological examination. These masses were further classified as inflammatory, benign and malignant lesions and the frequency of their occurrence and sex distribution were observed. Most common lesion was found to be inflammatory Polyps (20), followed by Cholesteatomas (12) and chronic non-specific inflammations (7), Abscess (1). In malignant lesions, Squamous cell carcinoma (7) was the commonest followed by Embryonal rhabdomyosarcoma (1) and in benign lesions, Carcinoid tumor (1) and Nevus (1) were diagnosed on histo-pathological examination. Right side masses were more common than left side; males were more

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affected than females. Adolescents/children more affected than adults for benign lesions while reverse was true for malignant lesions.[19]

In the present study, according to sex-wise distribution of lesions, 18 were males and 12 were females. Males were affected more than females for overall lesions. Polyp was clinically seen as mass in external ear canal/polypoidal mass with pain and discharge and on histopathological diagnosis, it was diagnosed as inflammatory polyp. Whereas, cholesteatoma was seen as cystic mass in ear with discharge (white cheesy material from external ear canal). Another study by Allanson BM et al, studied that squamous cell carcinoma (SCC) is the most common primary malignancy to affect the temporal bone, including primary cutaneous SCC of the pinna, external auditory canal, middle and inner ear. This anatomically complex region generates complicated three-dimensional specimens that can be a challenge for macroscopic and microscopic pathologic assessment. A universally accepted staging classification for these malignancies is still to be established. [20]Squamous cell carcinomas of the ear pinna are primarily the disease of older males who are exposed to sunlight for prolonged period. Squamous cell carcinomas of external ear canal are less common than that of ear pinna and can present in females between 5th and 6th decade of life. While in case of external ear canal, patient presented with long history of chronic otitis media followed by bloody discharge and hearing loss.[18] Squamous cell carcinomas tend to grow relentlessly & erode thin bony plate surrounding middle ear or reaching cranial cavity. [21]

Conclusion

Inflammatory polyp was the most common lesion and all lesions were more common in males than females.

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