

Cutaneous lesions of the auricular portion of external ear

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Abstract

Aim: Diseases coming from the external ear (outer ear canal and auricle) skin can be evaluated by many medical disciplines. External ear cutaneous lesions can be nonneoplastic, preneoplastic or neoplastic. Our aim in this study is to evaluate these surgically treated diseases.

Material and Methods: All external ear tumors and tumor-like lesions that were surgically excised between 2013 and 2018 were evaluated retrospectively. The relationship between demographic features and histopathological findings and prognostic factors were analyzed.

Results: Lesions were excised in the external ear in a total of 141 patients. While 91 (64.5%) of the cases were male and 50 (35.5%) were female, the average age was 33.9 (between 1 and 98 years old). While the average age of all benign tumors and non-neoplastic lesions was 27.7, 60.5% were male and 39.5% were female. The average age of malignant tumors and precursors was 67.2, the male rate was 86.4%, and the female rate was 13.6%. While cystic lesions are the most common lesion group with 27.7% (39 cases), benign non-epithelial tumors 27% (38 cases); malign epithelial tumors 15.6% (22 cases); hamartomas and similar lesions 11.3% (16 cases); inflammatory and infectious conditions 7.8% (11 cases); other formations (cutaneous deposit etc.) 7.8% (11 cases), and benign epithelial tumors 2.8% (4 cases), respectively. The most common cystic lesion was epidermal cyst and the most common benign and non-epithelial lesions were intradermal melanocytic nevi and keloid. Malignant epithelial tumors mostly detected in the external ear, squamous cell carcinoma and basal cell carcinoma. Among the hamartoma or congenital lesions and inflammatory lesions, accessory tragus and hair follicular nevus and foreign body granulomatous reaction were the most frequently observed, respectively. Among benign epithelial tumors, seborrheic keratosis was the most common.

Conclusion: There are rare cutaneous lesions of the external ear that are treated with various medical and surgical specialities. In this anatomical location, tumors seen at a young age are mostly benign, while malignant tumors are more common in older ages and males, while hamartoma and similar congenital lesions are observed at a young age. A multidisciplinary approach in treatment is important both in terms of prognosis and aesthetics.

Keywords: Benign; external ear; hamartoma; malignancy

INTRODUCTION

Diseases occurring in the skin of the outer ear (outer ear canal and auricle) can be evaluated by some medical branches. "Ear" consists of auricle and outer ear canal, middle ear, inner ear and its components. The outer ear consists of auricle (skin and elastic cartilage) and external auditory canal (1). Some of these lesions appear as congenital or hamartomatous lesions, usually in the form of papules smaller than 1 cm at birth or in childhood. Some tumors of the epidermis can be in the form of benign, premalignant or invasive carcinomas with different biological behavioral features with keratinocyte proliferation. It can be observed at any age in melanocytic nevi, which are characterized by basal hyperpigmentation and the increase of melanocytes in the basal layer in places exposed to the sun. Granulomatous lesions, one of the

inflammatory reaction patterns, consist of multinucleate giant cells, histiocytes and other inflammatory cells. While some of them are of the foreign body type, some of them may develop secondary to infectious agents. (2,3). Our aim in this study is to evaluate these surgically treated diseases.

MATERIAL and METHODS

The skin and subcutaneous materials excised from 141 patients between January 2013 and August 2018 at the Hatay State Hospital Pathology Laboratory were prospectively examined. Based on Weedon's Skin Pathology, McKee Pathology of the Skin, histopathologically and classified (2,3). Statistical analysis was performed using SPSS 25.0 software for Windows. Significance for all statistics were recorded if $p < 0.05$.

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RESULTS

In the study, 91 (64.5%) of the patients were male and 50 (35.5%) were female. While the average age was 33.9 (between 1 and 98 years old), it was 36.73 in males and 28.78 in females. While the lesion sizes varied between 0.2 mm and 4 cm, their mean maximum dimensions were 1.13 cm. While the average age of all benign tumors and non-neoplastic lesions was 27.7, 60.5% were male and 39.5% were female. The average age of malignant

tumors and precursors was 67.2, the male rate was 86.4%, and the female rate was 13.6%. Cystic lesions were observed as follows; epidermal cyst (35), dermoid cyst (2), pilar cyst (2), while hamartomatous lesions and tumors (16 cases); accessory tragus, hair follicular nevus, nevus sebaceous (Table 1 and Figure 1). Among epithelial and benign tumors, the following were observed; seborrheic keratosis (SK) (2), inverted follicular keratosis (1), squamous papilloma (1), malignant epithelial tumors and precursors; basal cell carcinoma (BCC) (10)

Table 1. Subtypes of external ear cutaneous lesions

Classification of dermatological diseases in the external ear	Frequency (case number)	Percent (%)	Mean age (years)	Gender (female / male)
Cystic lesions	39	27.7	41	11/28
Epidermal cyst (35)			33	
Dermoid cyst (2)			24.5	
Pilar cyst (2)			38.5	
Non-epithelial tumors of the external ear; non-malignant tumors	38	27.0	27.5	20/18
Keloid (12)			25.4	
Dermal nevus (11)			37.2	
Pilomatrixoma (5)			11	
Hemangioma (4)			11.7	
Others (6)				
Malignant tumors and precursors	22	15.6	67.2	3/19
SCC (9)			74.3	
BCC (10)			59.9	
Actinic keratosis (1)			58	
Bowenoid AK (1)			81	
Trichilemmal carcinoma (1)			73	
Hamartomas and tumors	16	11.3	9.1	9/7
Accessory tragus (8)			6.3	
Hair follicular nevus (4)			12.7	
Nevus sebaceous (1)			32	
Mixed (3)				
Inflammatory, viral or infectious lesions	11	7.8	23.9	3/8
Epithelial tumors of the external ear; non-malignant tumors	4	2.8	27.5	1/3
Seborrheic keratosis (2)			54.5	
Inverted foll. keratosis (1)			44	
Squamous papilloma (1)			13	
Total	141	100.0		

(Figure 2a and 2b), squamous cell carcinoma (SCC) (Figure 3a and 3b) (9), actinic keratosis (AK) (1), Bowenoid AK (1), were detected trichilemmal carcinoma (1). Distribution of benign non-epithelial lesions on the keloid (12), intradermal melanocytic nevus (11), pilomatrixoma (5), hemangioma (capillary lobular hemangioma, and pyogenic granuloma, 4), dermatofibroma, fibroepithelial polyp, schwannoma, juvenile xanthogranuloma, atypical fibroxanthoma (1), and mixed tumor was observed. Inflammatory, infectious, viral foreign body granulomatous reaction (7), non-necrotizing granulomatous reaction (2), necrotizing granulomatous reaction (1), verruca vulgaris were observed.

Cutaneous hyaline deposits, subepidermal calcified nodule, auricular calcinosis, exocytosis, and nonspecific specimens were detected.

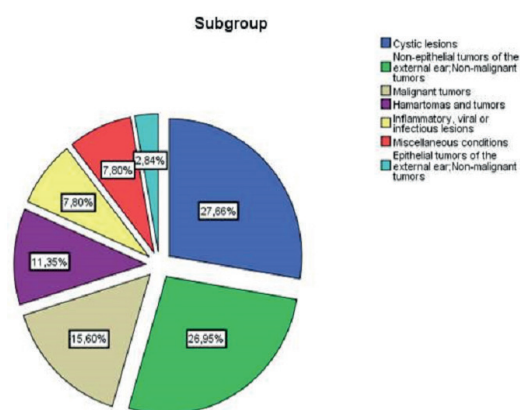


Figure 1. Subtypes of external ear cutaneous lesions

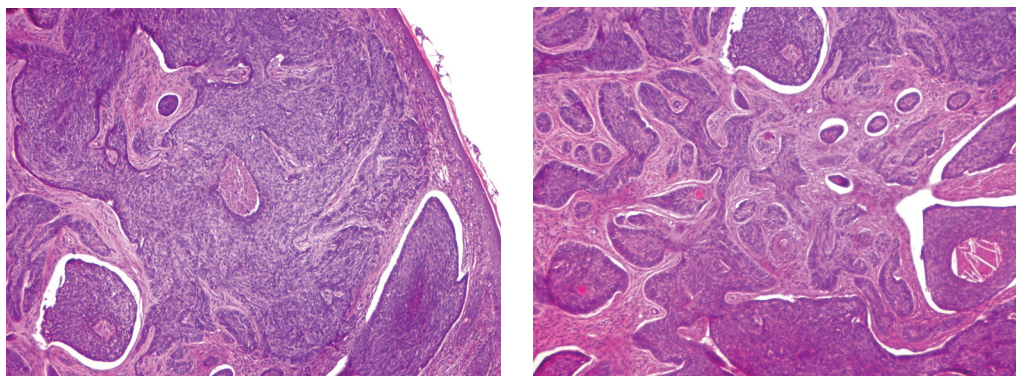


Figure 2. a, b Basal cell carcinoma in the external ear skin: Peripheral palisade, basophilic nuclei and the retraction artifact (hematoxylin-eosin-stain, original magnification x200 and x100)

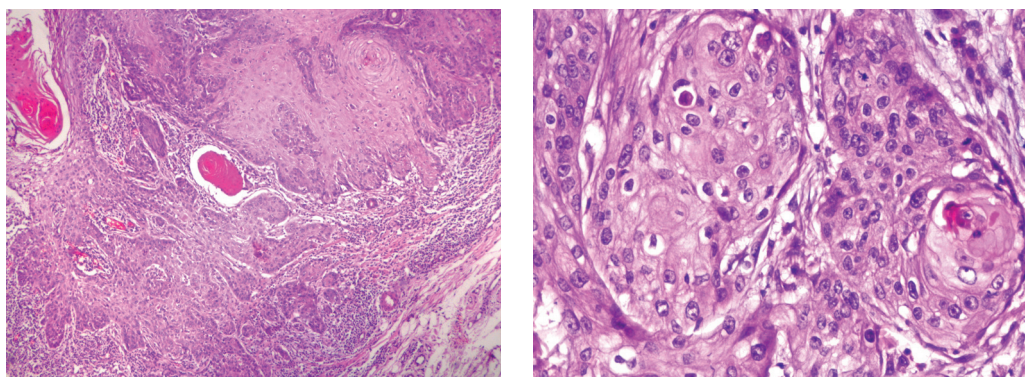


Figure 3. a, b Well-differentiated squamous cell carcinoma: Keratinization, minimal nuclear pleomorphism, intercellular bridges and mitotic figure (hematoxylin-eosin-stain, original magnification x100 and x400)

DISCUSSION

Specific anatomical features should be taken into account when evaluating skin lesions in the ear. External ear; it consists mainly of the outer ear canal and auricle, which contains the skin. These two anatomical structures consist of elastic cartilage covered with skin (4). SK is the most common epithelial benign tumor in the external ear. In general, it is observed in trunk, extremity and head and neck region in the elderly population. It is confused with verrucous epidermal hyperplasia and SCC. The development of secondary malignancy is extremely rare. Human papilloma virus, hormonal effect and exposure to ultraviolet light are among the suggested etiological causes. They are usually slightly raised lesions, sometimes pedunculated, gray-brown or even black lesions from the skin smaller than 1 cm (2,4,5). The most common benign tumor in our study was SK and was evaluated in accordance with the literature. AK, also known as senile keratosis or solar keratosis, occurs in middle and elderly ages. AK is directly related to UV-lights, especially it develops in the helical rim. It presents as a usually scaly lesions, erythematous or multiple. Although it is known that AK show up to 0.1-10% or even 20% of SCC with increasing age, this also indicates the presence of a high-risk population for diseases related to sun damage.

In the case of a persistent, recurrent or isolated lesion, a biopsy is recommended to confirm the diagnosis (3,4). BCC is the most common cutaneous tumor and also accounts for 90% of all malignant cutaneous lesions in the head and neck region. In particular, the auricular helix and periauricular area, which are the areas most exposed to UV light, and in older male patients, are mostly observed over 70 years of age. It is known that it plays a role in the development of BCC in some genetic factors. The most common nodular-ulcerative type is seen, often cartilage infiltrate. The most successful treatment is seen as the "micrographic-controlled" surgical option (two-step operation). The 5-year recurrence rate is about 5%, although it is associated with the type of treatment and the distance to the surgical margins (2,4). SCC develops in the head and neck region, 87% of which occur in the outer ear, and in particular the helical rim (anterior or posterior). The second most common skin cancer of the auricle region is cancer. It is generally associated with solar radiation in the sixth and seventh decades. While their average size is 2 cm, they can be observed in the middle ear through the external canal. At the time of diagnosis, 1% metastatic and 87% bone erosion. While most of the cases are surgically controlled, locally invasive tumors, cases with extracapsular invasion and multiple nodal metastasis can be treated with aggressive surgical ablation and

postoperative RT (6,7). In our study, BCC and SCC were observed in close ratios. This situation is different from the literature. This may be related to the role of hairless skin, particularly in the carcinogenesis pathway involved in the development of UV-induced SCC. In our study, the mean tumor sizes of SCC and BCCs were smaller than 2 cm (1 cm and 0.95 cm) and were smaller than the literature. This can be explained by early and easy access to the doctor.

Most of the benign lesions or masses developing in the auricula develop in the lobule, later in the tragus and helix. In the study conducted by Jung et al., the most frequently observed pathological lesion was epidermal cyst (25.3%), while it was reported as hypertrophic scar, accessory auricle, nevus, keloid, hemangioma and SK, respectively (8). Epidermal cysts are also called keratin cysts, epidermal inclusion cysts, sebaceous cysts, and especially eyebrows are also observed in the head and neck region. They are rarely observed in the outer ear area. They are thought to originate from the pilosebaceous follicle. Surgical removal is preferred and rarely recurrence develops (2,10). In our study, epidermal cysts were the most frequently observed benign ear lesions and were consistent with the literature.

Keloid is a different type of wound healing process, it is more common in black race than whites. Often it occurs as a result of an injury developing in this region, although it is observed in different anatomical regions, it is most commonly developed after piercing in the earlobe (2,9). Only 45-100% of keloid patients treated surgically develop recurrence, and this recurrence period varies between 5.5 months and 12 months, so follow-up for more than 1 year is recommended (8). In our study, two-thirds of the patients with keloid were female and under 30 years of age. This result was found to be compatible with the literature.

Hair follicle nevus (hair follicle tumor) in the external ear is a rare congenital hamartoma characterized by follicular differentiation. It contains many fine, mature hair follicles and connective tissue. Accessory tragus is a common benign congenital abnormality. It is reported that it is observed between 1 and 10 in every 1000 births. Accessory tragus can sometimes be multiple and bilateral. Rarely, syndromes in which a large number of congenital anomalies are identified are associated with the province. Lesions are polypoid elevations beneath the epidermis with a fibrovascular region containing a large number of hair follicles with small sebaceous glands, can be found in cartilage (2,3,11). In our study, the most frequently observed congenital anomaly is the accessory tragus, and this result is similar to previous studies.

Infectious dermatological diseases of the outer ear include acute diffuse otitis externa, chronic otitis externa, otomycosis (fungal), lymphocytoma, auricular chondritis and perichondritis, lupus vulgaris (tbc), Herpes zoster oticus (Ramsay Hunt syndrome), and includes of and among noninfectious inflammatory dermatologic

diseases; cold or burn injury of the external cutaneous ear, seborrheic dermatitis, contact dermatitis, atopic dermatitis, acne, lupus erythematosus and psoriasis (12).

CONCLUSION

There are rare cutaneous lesions of the outer ear that are treated with various medical and surgical specialties. In this anatomical location, tumors seen at a young age are mostly benign, while malignant tumors are more common in older ages and males, while hamartoma and similar congenital lesions are observed at a young age. A multidisciplinary approach in treatment is important both in terms of prognosis and aesthetics.

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