

Clinicopathological Analysis of Skin Adnexal Tumours: Four Year Retrospective Study

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Abstract

Original Research Article

Background: Cutaneous adnexal tumours are rare, heterogeneous, benign, or malignant tumours that differentiate into one or more types of skin appendages. **Methods:** This is a retrospective study of 68 cases of cutaneous adnexal tumours diagnosed in our anatomical pathology department over 4 years period from September 2019 to September 2023. **Results:** Benign adnexal tumours are the most common, accounting for an estimated 97% of cases. These tumours are more frequent in male patients aged between 51 and 70 years. The head and neck region is the most affected area (51% of cases). Tumours originating from the sweat glands were the most frequent. Follicular and sebaceous tumours came second and third. **Conclusion:** Adnexal tumours are a very diverse group of rare neoplasms. Accurate diagnosis is a challenge for the dermatologist and usually requires the histological study.

Keywords: malignant tumours, skin appendages, diagnosis, anatomical pathology.

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INTRODUCTION

Cutaneous adnexal tumours are a group of rare, heterogeneous tumours that may be follicular, sebaceous, eccrine, apocrine, or mixed. Given the non-specificity of the clinical presentation of these tumours, the anatomopathological study remains essential for a precise diagnosis according to the WHO classification of cutaneous tumours. This histological distinction seems primordial because it allows us to differentiate between benign and malignant tumours, and to diagnose certain tumours that may point towards syndromes, and others with the potential to become malignant.

We present a series of 68 cases of adnexal tumours diagnosed histologically in our pathology department at the Mohamed V military training hospital, to study their epidemiological profile, i.e., frequency, mean age at onset, sex ratio, and location. We also aim to identify their anatomopathological aspects and to compare the data from our study with those in the literature.

METHODS

It is a 4-year retrospective study realized in the pathology department of the Mohammed V Military Training Hospital in RABAT, from September 2019 to September 2023.

The clinical information, i.e., age, sex and location, was collected from the histopathology requisition forms archived in our department.

The cases of adnexal tumours included in our study were confirmed by the histological study of the specimens, after formalin fixation, paraffin embedding and preparation of slides stained with Haematoxylin and Eosin. Special stains, mainly PAS, were performed whenever required.

All cases of clinically evoked skin tumours without histological confirmation were excluded from our study.

Data were analysed using SSPS version 24.0. The results were expressed as percentages, frequencies and ranges for certain parameters, mainly patient age.

RESULTS

According to this retrospective study, our department diagnosed 68 cases of adnexal tumours during this 4-year study period. Benign tumours represented 97% of the cases (n=66), whereas malignant tumours represented only 3% of the latter (n=2). The average age of patients was 47 years, with extremes ranging from 10 to 83 years. The highest incidence was observed in the age group of 51–70 years (48%)

followed, respectively, by age groups of 31–50 years (24%), 10–30 years (19%), and >71 years (9%) (Figure 1).

Male to female sex ratio is estimated at 1.48:1 (40 males & 28 females). 51% of cases (= 35) are located in the head and neck region. While 26% of cases (= 18) are located in the upper and lower limbs (n= 18 cases); 13% (n=9) in the trunk and 9% (n= 6) in the genital area. In the face and neck, tumours are mainly located on the scalp, eyebrows, eyelids, chin, nose and cheeks. In the limbs, lesions are located in the fingers, wrists, arms, thighs and feet (Table 1).

Of the 68 cases of cutaneous adnexal tumours studied, tumours of sweat glands were the majority representing 48 cases (71%). Tumours of follicular differentiation came second with 15/68 cases (22%). Tumours with sebaceous differentiation are the least frequent, with only 5 cases found (7%).

The sweat gland tumors involve 18 cases of syringoma, 17 cases of hidradenoma, 6 cases of hydrocystoma, 3 cases of spiradenoma, 2 cases of poroma, 1 case of cylindroma and 1 malignant case of porocarcinoma (Table 2).

The hair follicle tumors are all benign and comprised of 9 cases of trichoblastoma, 5 cases of pilomatrixoma, and 1 case of trichofolliculoma (Table 3).

Sebaceous gland tumors cover 3 cases of sebaceous adenoma, 1 case of nevus sebaceous of Jadasson and 1 case of sebaceous carcinoma (Table 4).

Malignant cutaneous adnexal tumours are rare. In our series, we found only 2 cases. The first was a porocarcinoma on the left heel in a 23-year-old patient. The second case was a sebaceous carcinoma on the back of a 59-year-old patient (Figure 2).

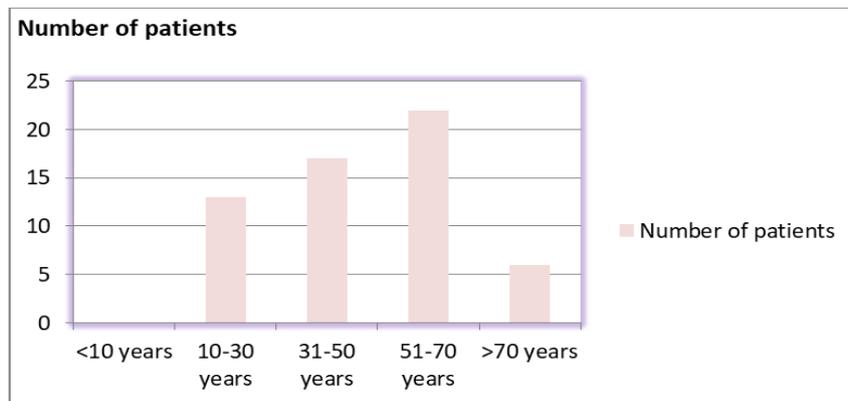


Figure 1: Number of patients among different age groups

Table 1: Distribution of cases of adnexal tumors of skin based on anatomical locations

Anatomical location	Number of cases	Percentage
Head and neck	35	51%
Trunk	9	13%
Lower and upper limb	18	26%
Genital region	6	9%

Table 2: Distribution of histological subtypes of adnexal tumor of sweat gland in origin

	Histological subtypes	Number of cases	Percentage
Benign	Syringoma	18	37,5%
	Hidradenoma	17	35,41%
	Hydrocystoma	6	12,5%
	Spiradenoma	3	6,25 %
	Poroma	2	4,16%
	Cylindroma	1	2%
Malignant	Porocarcinoma	1	2%

Table 3: Distribution of histological subtypes of adnexal tumor of hair-follicular in origin

	Histological subtypes	Number of cases	Percentage
Benign	Trichoblastoma	9	60%
	Pilomatrixoma	5	33%
	trichofolliculoma	1	7%

Table 4: Distribution of tumors of sebaceous differentiation

	Histological subtypes	Number of cases	Percentage
Benign	Sebaceous adenoma	3	60%
	Nevus sebaceous of Jadasson	1	20%
Malignant	Sebaceous carcinoma	1	20%

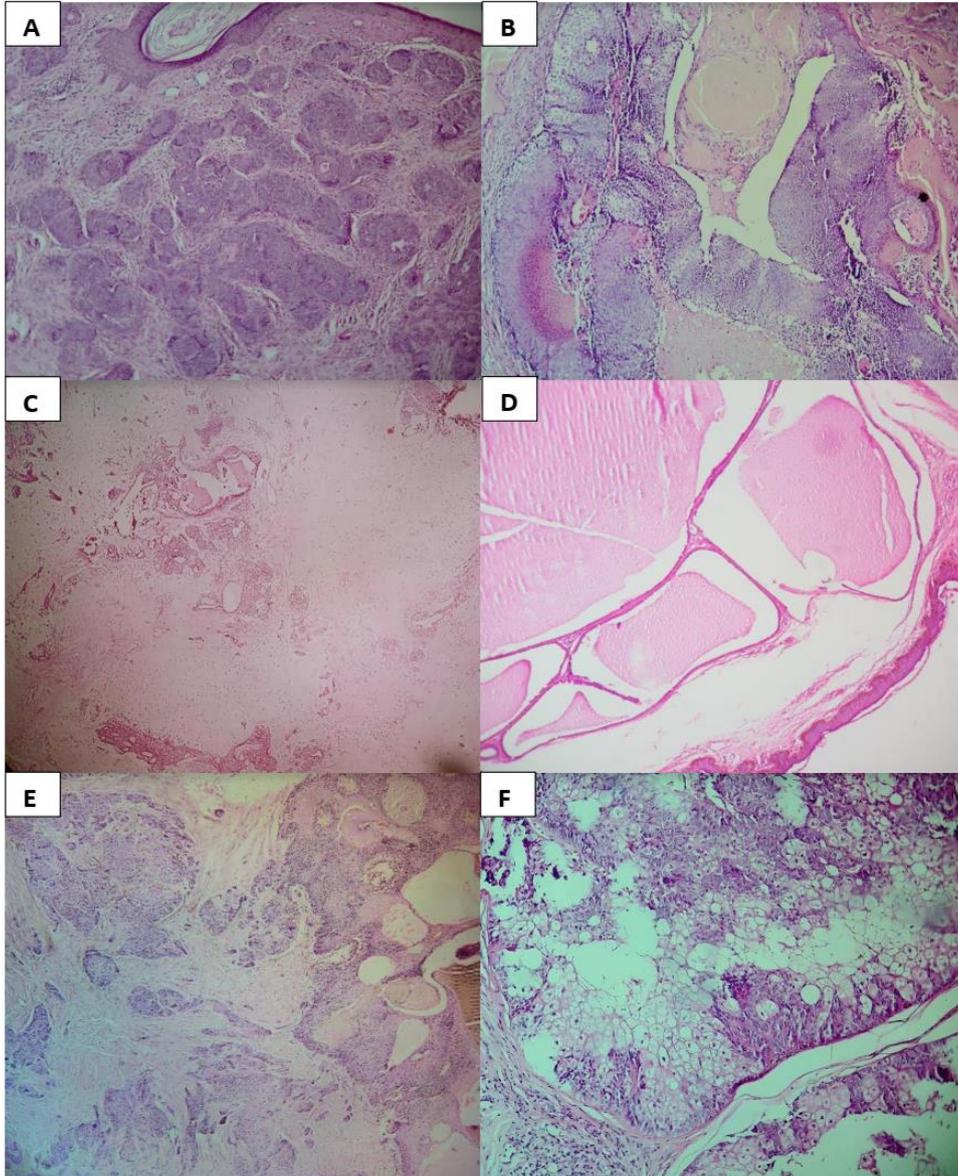


Figure 2: Histological images of some cases of adnexal tumours diagnosed in our department; A- Trichoblastoma (HE_100) B- Pilomatricoma (HE_100) C- Chondroide Syringoma (HE_20) D-Eccrine hidrocystoma (HE_40) E- Porocarcinoma (HE_40) F- Sebaceous carcinoma (HE_100)

DISCUSSION

Cutaneous adnexal tumours represent a heterogeneous group of tumours differentiating into one or more cutaneous appendages. They are rare tumours with an estimated prevalence of 0.3% according to a study by Kaur K *et al.*, [1] and 0.9% according to a study carried out in Nigeria [2]. Other studies have reported a slightly higher prevalence estimated at 2.6% and 3.3% respectively according to Shulbha V Sejejan *et al.*, [3] and K Kamyab Hesari *et al*, for 4 years [4].

The age distribution of cutaneous adnexal tumours is highly variable. In our study, the mean age of onset was estimated at 47 years, with a maximum number of cases between 51 and 70 years of age. These results are comparable to those reported by Sharma *et al.*, who found a maximum number of cases in patients aged between 51 and 60 years [5]. For other authors, the peak frequency is different and concerns a younger group of patients in the 31-40 age bracket [6].

Concerning the Male: Female ratio, certain studies such as those conducted by Ankit S *et al.*, [5] and Shulbha V Sejekanl [3], have reported a slight male predominance with sex ratios of 1.07:01 and 1.2:1 respectively. However, other authors have reported a female predominance with a male: female ratio of 1:2,3; 1:1,68 and 1: 1.88 according to Nair [7], Vani *et al.*, [8] and Saha *et al.*, [9] respectively.

In our study there was a predominance of males with a sex ratio of 1.48:1. It's due to the predominance of males in the military environment.

According to our study and the findings of other authors, the head and neck region is the anatomical site most affected by adnexal skin tumours [7-10]. The extremities, trunk and genital region are less frequent sites.

Histologically, cutaneous adnexal tumours represent a heterogeneous group of neoplasms, most often benign or malignant. They are classified, according to the 2018 WHO classification of skin tumours, according to their differentiation, into follicular, sebaceous, eccrine and apocrine tumours. In all studies, including our own, benign tumours are the most common representing an estimated prevalence of 77.14%, 80.36%, 74.50%, and 88.5% respectively according to Sharma *et al.*, [5], Radhika *et al.*, [11]; Samaila *et al.*, [2]; and Vani *et al.*, [8]. Our study shows that tumours of the sweat glands are the most common (71%). Follicular tumours come second (22%), followed by sebaceous tumours (7%). These findings are consistent with the studies carried out by Sharma *et al.*, [5], Vani *et al.*, [8], and Nair [7] who found that tumours of sweat gland origin are the most common. In contrast, Kant *et al.*, [12] and Jayalakshmi and Looi [13] found that hair follicular tumours are the commonest subtypes of skin adnexal tumours.

Syringoma, hidradenoma, hydrocystoma, trichoblastoma and pilomatrixoma are the most common adnexal tumors reported in our study. Syringoma are a benign well-circumscribed sweat gland tumour. Histologically, it has two components; the first is epithelial, consisting of tubes and cords lined by a double layer of cuboidal cells. The second component is made up of a sclerotic stroma [14].

Hidradenoma are benign sweat gland tumor. Histologically, it presents as a well-circumscribed, lobular, solid or sometimes cystic proliferation in the dermis. The tumour cells are generally clear polygonal, or basophilic [14].

Hydrocystoma are generally solitary and asymptomatic lesion which presents as a cystic lesion lined by an epithelium of columnar cells surrounded by a basal layer of myoepithelial cells [14].

Trichoblastoma is a benign neoplasm which generally presents as a well-circumscribed dermal mass with no surrounding ulceration. It consists of basaloid tumour cells associated with a stroma typically resembling follicular mesenchyme.

Pilomatricoma is a benign tumor differentiating to the hair cortex and the matrix. Histologically, it appears as one or more dermal nodules, comprising islands of basaloid cells exhibiting abrupt keratinization, without intervening granular layer [14].

CONCLUSION

Adnexal tumours of the skin are a heterogeneous group of tumours, most often benign. The histological study is essential to determine the exact differentiation of these tumours, to diagnose malignant tumours and to guide their therapeutic management.

The main findings of our work include the frequent location in the head, and neck, the predominance of males, an average age of 47, and the predominance of benign tumours, particularly those of the sweat glands, followed by follicular, then sebaceous tumours.

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