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Research Article

Clinico-pathological study of skin appendageal tumours from northern India

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ABSTRACT

Background: The skin appendageal tumours (ATs) encompass a wide variety of tumours clinically presenting as papules and nodules and with histologically distinct features. Early recognition of skin adnexal tumours is very important aspect as far as patient management and prognosis is concerned. The main of the study was to analyse and ascertain clinico-pathological study of skin appendageal tumours in a tertiary care centre.
Methods: Retrospective cohort of patients with confirmed diagnosis of AT during 1st January 2013 to 31st December 2015 formed the study population. Study tools were records of the patients such as information from MRD (Medical Record Department) and records from histopathological section i.e. histopathological requisition forms and clinical case sheets. Cases clinically diagnosed as appendageal tumours, but not histologically, were excluded from the study.
Results: Finally a total of 48 cases were included in this study. Mean age of onset was 22.7±6.4 years and the duration of complaints 5.34 ± 4.5 years. Benign follicular, benign eccrine, benign sebaceous and benign apocrine tumours were observed to be 48.89%, 42.22%, 2.22% and 6.67% respectively. Regarding distribution of benign and malignant tumours, among the all types of skin appendageal tumours diagnosed, 93.75% (N=45) were benign and 6.25% (N=3) were malignant. Pilomatricoma (54.54%), eccrine acrospiroma (26.31%) and syringocystadenoma papilliferum (67%) were observed as most commonly distributed histopathological types of diagnosed benign follicular, benign eccrine and benign apocrine tumours. Number of benign skin appendageal tumours was found maximum (n=25) in the age group of 26-50 years in both the sexes whereas malignant skin appendageal tumours were observed only (n=3) in the age group of 51-75 years in both the sexes.
Conclusions: Findings of this study can be utilized to suspect type of AT thus helping in diagnosis. Profile, pattern and clinical appearance can serve as vital clue though histological confirmation is mandatory to confirm.

Key words: Study, Retrospective, Clinical, Pathological, Skin appendageal tumours

INTRODUCTION

There are literally hundreds of neoplasms that can arise from cutaneous appendages and they are known since long. The skin appendageal tumours (ATs) encompass a wide variety of tumours clinically presenting as papules and nodules and with histologically distinct features.[1,2] Appendageal tumors (ATs) are neoplasms which

differentiate toward or arise from pilosebaceous apparatus, apocrine gland or eccrine sweat gland.[1] Majority of these tumors are benign.[3] They are basically classified into four groups: tumours with differentiation towards hair follicles, sebaceous glands, eccrine or apocrine glands. These tumours are usually benign, but rarely malignancy can supervene.[4]

Local recurrence is well recorded but metastases are rare with the exception of the malignant eccrine and apocrine gland derived tumours and sebaceous carcinoma. Clinical diagnosis of different entity is often difficult, as most of the appendageal tumours present as asymptomatic papules or nodules. Anatomic location, number and distribution of lesions provide important clue but histopathology is invaluable in confirmation of the diagnosis.[5]

Early recognition of skin adnexal tumours is very important aspect as far as patient management and prognosis is concerned. The challenges encountered while diagnosing the various types of these tumours vary from place to place depending on the histological types & demographic pattern. Paucity of literature also warrants this study. Therefore this study was planned to analyse and ascertain clinico-pathological study of skin appendageal tumours in a tertiary care centre.

METHODS

The present retrospective study was planned and executed by the Department of Pathology in collaboration with Department of Dermatology, F. H. Medical College, Tundla, Uttar Pradesh, India. Retrospective cohort of patients with confirmed diagnosis of AT during 1st January 2013 to 31st December 2015 at this tertiary care health centre formed the study population. Histologically proven skin appendageal tumours by the histopathology section of Department of Pathology were included in this study. Confirmed cases of AT were considered as the finally analysable subjects. Cases clinically diagnosed as appendageal tumours, but not histologically, were excluded from the study. Histopathological diagnosis was mandatory for inclusion in the study.

Study tools were records of the patients such as information from MRD and records from histopathological section i.e. histopathological requisition forms and clinical case sheets. Histopathological section follows following procedure after proper fixation of specimen in 10% formalin; sections were taken from representative areas submitted for routine processing and then were studied by light microscopy after H and E (hematoxylin and eosin) staining. Following this criterion, the cases selected for the study were then classified into follicular, sebaceous, eccrine, and apocrine tumors.[6] Finally a total of 48 cases were included in this study.

Permission of Institutional ethics committee (IEC) was sought before the commencement of the study. All the proforma were manually checked and edited for completeness and consistency and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). The results were expressed using appropriate statistical methods.

RESULTS

Mean presenting age of our study population was 28.2±9.45 years. Mean age of onset was 22.7±6.4 years and the duration of complaints 5.34±4.5 years. Gender wise, males outnumbered female study subjects. Maximum number of cases (N=25, 52.1%) were observed in the age group of 26 years to 50 years. Seventy seven percent patients belonged to the lower socio-economic status whereas 20% and 3% patients belonged to the middle and higher socioeconomic status respectively. Seventy six percent patients belonged to rural area. Occupation wise majority of patients were agriculturists and housewives.

The commonest presenting lesions of skin tumour were papules (76%), followed by nodules (15%), plaque (12%) and patch (5%). Majority (60%) of the patients presented with single lesion and 40% presented with multiple skin lesions. Most of the patients presented with asymptomatic skin lesions (76%) and commonest presenting symptom was bleeding (14%), pain (12%) and itching (8%). Most of the patients (59%) suffered from skin tumours for years. In 25% of patients the duration was in months and 20% of patients presented with the skin lesions at birth. Most (64%) of the skin lesions were firm in consistency whereas it was soft and cystic in consistency in 28% and 8% of cases respectively.

Regarding distribution of benign amd malignant tumours, among the all types of skin appendageal tumours diagnosed, 93.75% (N=45) were benign and 6.25% (N=3) were malignant. As per gender wise distribution of skin appendageal tumours, male subjects were seen more with benign tumours and females were with more malignant tumours. Skin appendageal tumours were found maximum on the scalp in both the sexes.

Pilomatricoma (54.54%), eccrine acrospiroma (26.31%) and syringocystadenoma papilliferum (67%) were observed as most commonly distributed histopathological types of diagnosed benign follicular, benign eccrine and benign apocrine tumours (Table 1).

Number of benign skin appendageal tumours was found maximum (n=25) in the age group of 26-50 years in both the sexes whereas malignant skin appendageal tumours were observed only (n=3) in the age group of 51-75 years in both the sexes (Table 2).

Table 1: Distribution of histopathological types of diagnosed tumours.

Histopathological type of tumour	Frequency	Percent
Benign tumours		
Benign follicular tumours		
Pilomatricoma	12	54.54
Trichofolliculoma	2	9.09
Sebaceous hyperplasia	1	4.55
Proliferating trichilemmal tumour	3	13.63
Trichoepithhelioma	3	13.63
Trichoadenoma	1	4.55
Total	22	100.0
Benign eccrine tumours		
Eccrine spiradenoma	2	10.53
Eccrine hidrocystoma	2	10.53
Eccrine cylindroma	3	15.79
Nodular hidradenoma\ Eccrine acrospiroma	5	26.31
Syringoma	2	10.53
Eccrine poroma	3	15.79
Chondroid syringoma	2	10.53
Total	19	100.0
Benign sebaceous tumour		
Sebaceous hyperplasia	1	100.0
Total	1	100.0
Benign apocrine tumour		
Apocrine hidradenoma papilliferum	1	33.0
Syringocystadenoma papilliferum	2	67.0
Total	3	100.0
Malignant tumours		
Malignant eccrine tumour		
Eccrine porocarcinoma	2	100.0
Total	2	100.0
Malignant sebaceous tumour		
Sebaceous carcinoma	1	100.0
Total	1	100.0

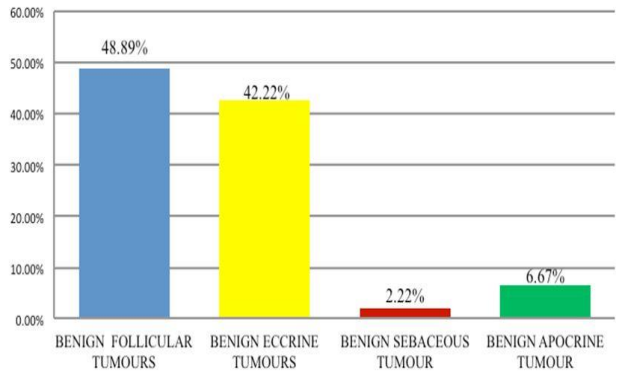

Figure 1: Distribution of diagnosed benign skin appendagel tumours.

Table 2: Sex and age group wise distribution of diagnosed skin appendageal tumours.

Gender	Age groups		Type of skin appendageal tumours		Total
			Benign	Malignant	
Male	Age groups	< 25	7	0	7
		26-50	11	0	11
		51-75	5	1	6
		>75	1	0	1
	Total		24	1	25
Female	Age groups	< 25	4	0	4
		26-50	14	0	14
		51-75	3	2	5
	Total		21	2	23

Figure 1 depicts distribution of subtypes of benign appendageal tumours. Benign follicular, benign eccrine, benign sebaceous and benign apocrine tumours were observed to be 48.89%, 42.22%, 2.22% and 6.67% respectively (Figure 1).

DISCUSSION

ATs are classified into 4 types according to their differentiation toward apocrine gland, eccrine gland, sebaceous gland and hair follicle.[2] Importance of diagnosing ATs lies in the fact that in some instances the presence of ATs may lead to the recognition of a genetic syndrome, like Muir-Torre syndrome associated with sebaceous tumors, Cowden's syndrome with trichilemmomas etc.[1]

In this study tumor did not contain element of two or more appendage in varying degrees of maturation. It is postulated that ATs are derived from cells that have the ability to differentiate toward any of the appendages. In many lesions, the differentiation is uniform and the tumor can be recognized and categorized based on its resemblance to a normal appendage or part of it. In other cases, the pluripotent cell may differentiate toward more than one type of appendage giving rise to a tumor that contains element of two or more appendage in varying degrees of maturation.[9] Various studies had been done showing these combined characteristics of ATs.[10] In our study, though such combined nature was not detected.

Males outnumbered females in the current study. Other studies by Requena L. and Bansal A. are also in concordance with our observations.[10,11] This is in contrast to the study by Saha A[8] who cited that females outnumbered males in his study. The long duration tumours were seen in our study as well as their asymptomatic nature; in most cases, points towards benign nature of the tumours. Cases were seen most frequently in younger age group. These results are cohort with others.[12,13]

In our study, all cases of trichoepithelioma were distributed around nose suggesting that trichoepithelioma remains the primary differential diagnosis of ATs centred around nose. Trichoepithelioma was found to be solitary only in two cases, which is contradictory to the previous study from Pakistan where solitary variety was found to be more common than multiple (Figure 2).[14]

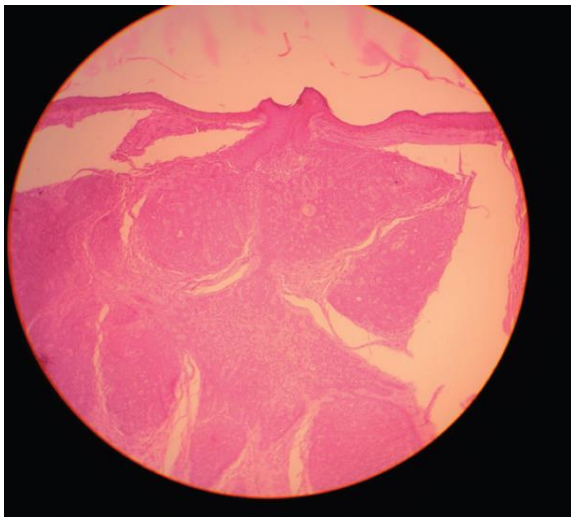

Figure 2: Histopathology of trichoepithelioma showing cribriform appearance and horn cyst, (H&E stain, 100×).

The case of nodular hidradenoma was characterized by lobulated tumour masses in the dermis with eosinophilic hyalinised stroma and lumina and cyst (Figure 3).

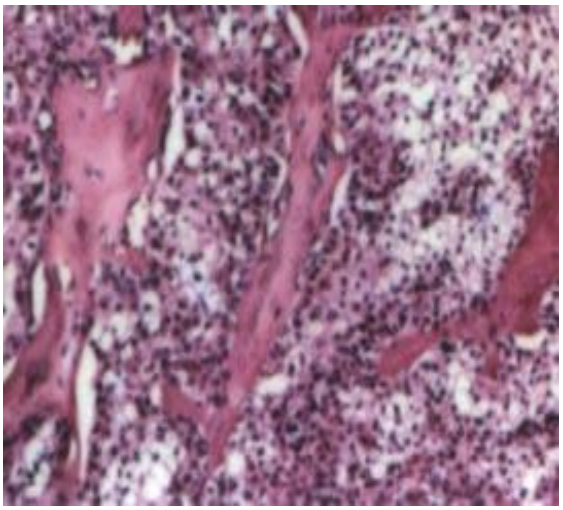

Figure 3: Nodular hidradenoma - tumour cells with hyalinised stroma, (H&E, ×400).

Syringoma was characterized histologically by the presence of cystic ductal structures lined by 2 layers of cells. Some of the ducts showed a comma like tail of epithelial cells at one end, giving the appearance of a tadpole. (Figure 4)

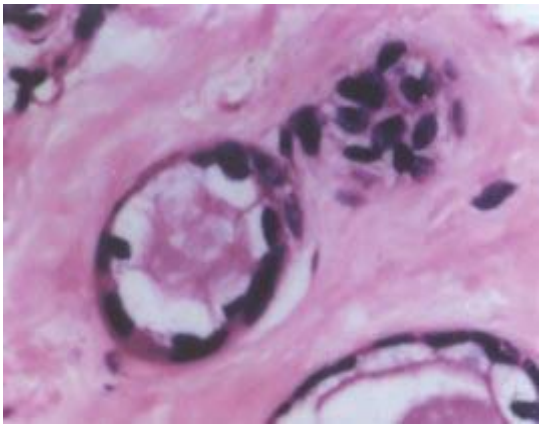

Figure 4: Histopathology of syringoma showing cords of epithelial cells resembling tadpole, (H&E, ×400).

The eccrine porocarcinoma revealed large islands and nest of tumour cells extending from epidermis into the dermis. Tumour cells showed large hypercromatic nuclei with moderate nuclear atypia. Many mitotic figures and necrosis were also seen. At places cystic lumina was seen. The sebaceous carcinoma showed tumour cells arranged in irregular lobules. Tumour cells showed marked atypia, conspicuous nuecoli and foamy cytoplasm. Frequent mytosis were seen under the microscope. Similar observations are made by others.[15]

CONCLUSIONS

To summarize, findings of the current study reveal that appendageal skin tumours are relatively uncommon. Findings of this study can be utilized to suspect type of AT thus helping in diagnosis. Profile, pattern and clinical appearance can serve as vital clue though histological confirmation is mandatory to confirm. Very few studies on appendageal tumours are available in literature hence, this study attempts to bridge this lacuna. Multicentre studies are recommended.

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