

A Study of Spectrum of Skin Adnexal Tumors in Ajmer Region

Geeta Pachori^{1*}, Manisha Jain², Soniya Sanadhya³, Tushar Bayla⁴

^{1*}Senior Professor and Head, ²Resident, ³Senior Demonstrator,
Department of Pathology, J.L.N. Medical College, Ajmer, Rajasthan, India.
⁴Medical Officer, Ajmer, Rajasthan, India.

ABSTRACT

Introduction: The adnexa are part of the skin and are composed of different kinds of cells that can give rise to a wide variety of tumors. It is comprised of sweat glands, sebaceous glands and hair follicles, all of which share the same origin. Although most of these tumors are benign, it is important to diagnose them accurately since many of such tumors are genetically predetermined. The aims of this work are to determine the spectrum of histopathological patterns of Adnexal tumors of skin, to characterise the tumors histologically according to World Health Organization (WHO) classification.

Materials and Methods: The study was carried out in Department of Pathology, JLN Medical College, Ajmer and Associated group of Hospitals, both retrospective (July 2013 to June 2014) and prospective (July 2014 to June 2016) over a period of 3 years. In this study biopsies received in 10% buffered formalin were processed and slides were stained with routine H & E stain and special stains done wherever needed.

Results: A total of 50 cases of Skin Adnexal Tumors (SAT) were studied during the study period which were classified into different groups. 47(94%) cases were benign and only 3(6%) cases were malignant. Out of 50 SAT's hair follicle tumors 22 cases (44%) were the most common and the least common were tumors with sebaceous differentiation 9 (18%) cases. Most common SAT was nodular hidradenoma 13cases (26%). Among malignant adnexal tumors there were 1 (2%) case each of sebaceous carcinoma, microcystic adnexal tumor and

paget's disease. Most common age group affected range from 41-50 years (11 cases) and least common age was above 80 years. Skin adnexal tumors are more common in females than males (M:F ratio 20:30). Clinicopathological correlation was found in 20(40%) cases while in 30(60%) cases histopathology gave the final diagnosis.

Conclusion: Adnexal skin tumors have distinct histological patterns which differentiates them from other cutaneous tumors. Clinical diagnosis of adnexal tumors is extremely difficult because various adnexal tumors have similar clinical presentation and histopathological examination becomes essential in diagnosis.

Keywords: SAT, H&E, Histopathological Examination.

*Correspondence to:

Dr. Geeta Pachori,
Senior Professor and Head,
Department of Pathology,
J.L.N. Medical College, Ajmer, Rajasthan, India.

Article History:

Received: 06-08-2017, Revised: 05-09-2017, Accepted: 17-09-2017

Access this article online

Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.5.017	

INTRODUCTION

The adnexa are part of the skin and are composed of different kinds of cells that can give rise to a wide variety of tumors. It is comprised of sweat glands, sebaceous glands and hair follicles, all of which share the same origin. Their detailed morphological classification is difficult because of the variety of tissue elements and patterns seen. Skin adnexal tumors (SATs) are those neoplasms that differentiate toward or arise from pilosebaceous unit, eccrine sweat glands or apocrine sweat glands, and these tumors are classified into four groups that exhibit histologic features analogous to hair follicles, sebaceous glands, and eccrine glands.¹⁻⁴ Although most of these tumors are benign, it is important to diagnose them accurately since many of such tumors are genetically predetermined and may arise in the form of multiple potentially disfiguring lesions, or may represent sites of

predilection for later development of more aggressive tumors, or may themselves be locally aggressive or capable of metastasis and may be misdiagnosed as metastatic tumours to the skin.^{5,6} Dermal adnexal tumours pose diagnostic difficulty due to morphological overlap. They are relatively uncommon and exact prevalence is unknown. Common sites are head and neck, trunk, and extremities. They are classified according to appendageal differentiation.^{7,8} The aims of this work are to determine the spectrum of histopathological patterns of Adnexal tumors of skin, to characterise the tumors histologically according to World Health Organization (WHO) classification system for skin adnexal tumors and to analyse the tumor with regard to behaviour, anatomic location, age and sex of the patient and to determine the clinicopathological correlation.

MATERIALS AND METHODS

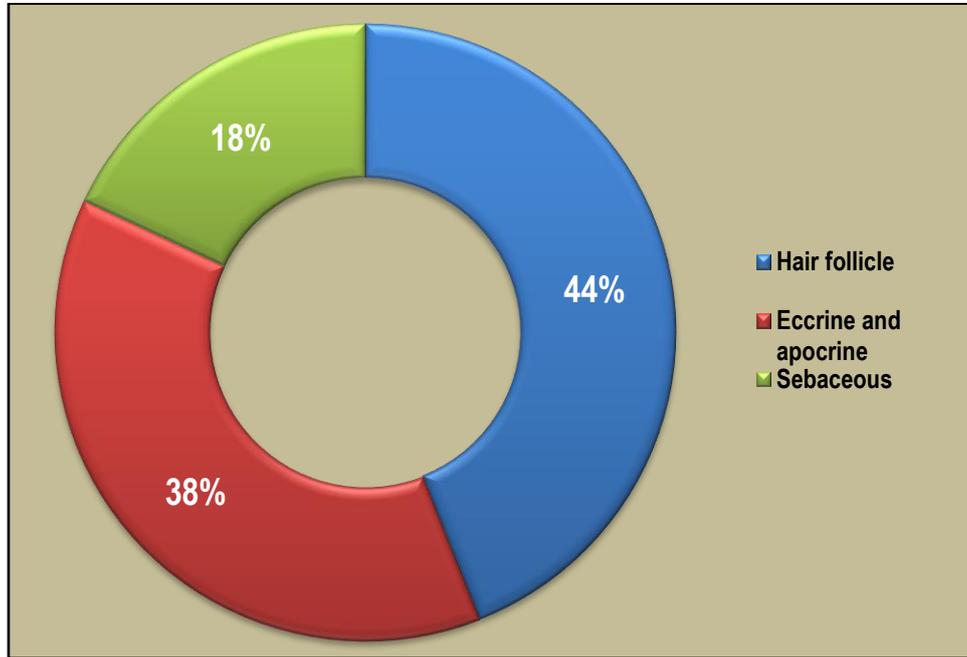
The study was carried out in Department of Pathology, JLN Medical College and Associated group of Hospitals, Ajmer, Rajasthan ,both retrospective (July 2013 to June 2014) and prospective (July 2014 to June 2016) over a period of 3 years.

For the retrospective study, blocks were retrieved from the histopathological section and re-examined.

For prospective study we received biopsy specimen in 10% buffered formalin. A properly completed surgical pathology requisition form containing the patient's identification, age, sex,

essential clinical data, provisional clinical diagnosis and tissue submitted was checked.

Then the specimen are allowed to fix in 10% buffered formalin for 12-14 hours at room temperature and the gross features like size, shape, colour, external surface, cut surface, consistency, color of cut section are noted. Grossing was done and processed as per standard protocol. Formalin fixed and paraffin embedded sections were stained routinely with H&E technique. Special stains were done wherever necessary like PAS.



Graph 1: Distribution of various types of skin adnexal tumors

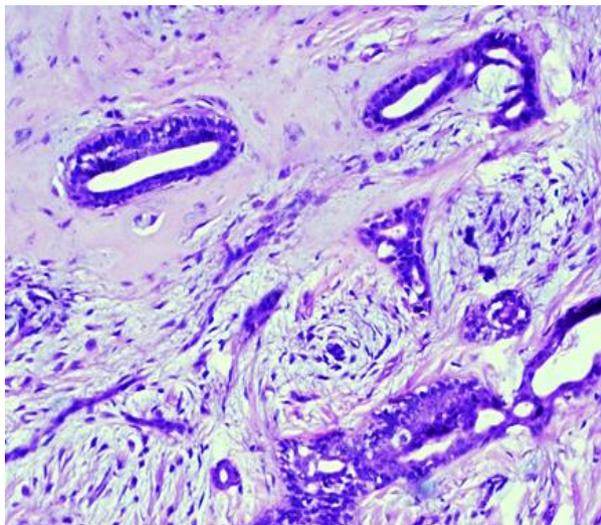


Fig 1: Chondroid Syringoma – Showing proliferating ductoglandular eccrine epithelium in chondromyxoid stroma. (H&E, 200X)

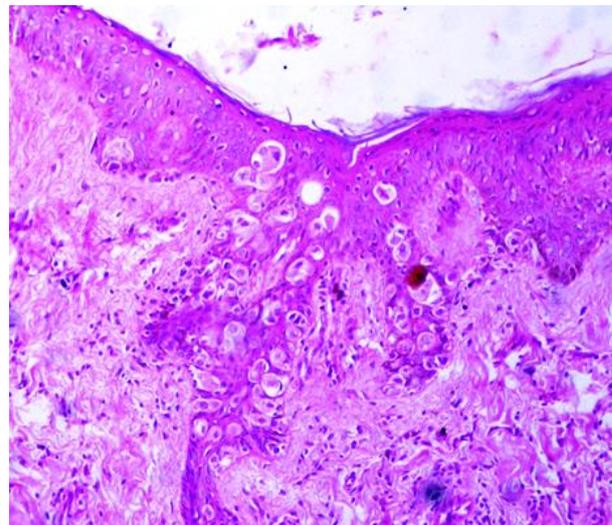


Fig.2: Paget's disease-Showing large, round Paget cells in epidermis having pale cytoplasm.(200X, H&E)

Table 1: Distribution of type of neoplasm

Type of neoplasm	No. of cases	Percentage (%)
Benign	47	94
Malignant	3	6
Total	50	100

Table 2: Age-wise distribution of skin adnexal tumors

Lesion	Age Group in Years									No.of cases (%)
	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	
Trichelemmal cyst	-	-	-	-	3	2	1	-	-	6 (12)
Trichoepithelioma	-	-	-	-	-	-	-	1	1	2 (4)
Trichoblastoma	-	-	-	-	-	-	-	1	-	1 (2)
Trichofolliculoma	-	-	-	-	-	-	1	-	-	1 (2)
Pilomatrixoma	2	4	2	2	1	-	1	-	-	12 (24)
Nodular hidradenoma	-	1	-	1	5	3	3	-	-	13 (26)
Apocrine hydrocystoma	-	-	-	-	-	1	-	-	-	1 (2)
Cylindroma	-	-	-	-	-	1	1	-	-	2 (4)
Chondroid syringoma	-	-	1	-	-	-	-	-	-	1 (2)
Nevus sebaceous	1	-	1	2	-	-	-	-	-	4 (8)
Sebaceous hyperplasia	-	-	-	1	-	1	-	-	-	2 (4)
Sebaceous adenoma	-	-	-	-	-	-	2	-	-	2 (4)
Sebaceous carcinoma	-	-	-	-	1	-	-	-	-	1 (2)
Microcystic adnexal carcinoma	-	-	-	-	1	-	-	-	-	1 (2)
Paget's disease	-	-	-	-	-	1	-	-	-	1 (2)
Total	3	5	4	6	11	9	9	2	1	50 (100)

Table 3: Sex-wise distribution of skin adnexal tumors

S. No.	Lesion	Male	Female	M:F ratio
1.	Trichelemmal cyst	1	5	1:5
2.	Trichoepithelioma	1	1	1:1
3.	Trichoblastoma	1	-	-
4.	Trichofolliculoma	1	-	-
5.	Pilomatrixoma	3	9	1:3
6.	Nodular hidradenoma	4	9	4:9
7.	Apocrine hydrocystoma	1	-	-
8.	Cylindroma	1	1	1:1
9.	Chondroid syringoma	1	-	-
10.	Nevus sebaceous	3	1	3:1
11.	Sebaceous hyperplasia	1	1	1:1
12.	Sebaceous adenoma	1	1	1:1
13.	Sebaceous carcinoma	-	1	-
14.	Microcystic adnexal carcinoma	1	-	-
15.	Paget's disease	-	1	-
	Total	20	30	2:3

Table 4: Showing comparison of benign and malignant skin adnexal tumors with other studies

S.No.	Authors	Benign Tumors	Malignant Tumors
1.	Sirsat and Kail ¹² (1964)	35 (68.64%)	16 (31.36%)
2.	Vaishnav and Dharkar ¹³ (1974)	43 (89.58%)	05 (10.42%)
3.	Reddy et al ¹⁴ (1982)	59 (69.41%)	26 (30.59%)
4.	Present study	47 (94%)	3 (6%)

RESULTS

A total of 50 cases were studied during the study period which was classified into different groups. (Graph 1) 47(94%) cases were benign and only 3(6%) cases were malignant.(Table 1) Out of 50 SAT's hair follicle tumors 22 cases (44%) were the most common followed by tumors with eccrine and apocrine differentiation 19 (38%) cases and the least common were

tumors with sebaceous differentiation 9 (18%) cases. Most common was SAT was nodular hidradenoma 13cases (26%) followed by 12 (24%) cases of pilomatrixoma; 3 (12%) cases of trichelemmal cyst; 4 (8%) cases of nevus sebaceous; 2 (4%) cases each of trichoepithelioma, cylindroma, sebaceous hyperplasia, sebaceous adenoma and 1 (4%) case each of trichoblastoma, trichofolliculoma, apocrine hydrocystoma, and

chondroid syringoma (Fig 1). Among malignant adnexal tumors there were 1 (2%) case each of sebaceous carcinoma, microcystic adnexal tumor and paget's disease (Fig 2). Most common site 28(56%) cases were found in head and neck region. Most common age group affected range from 41-50 years (11 cases) and least common age was above 80 years.(Table 2) Skin adnexal tumors are more common in females than males (M:F ratio 20:30). Trichoepithelioma, cylindroma, sebaceous hyperplasia and adenoma were equal in both male and female (M:F ratio 1:1).(Table 3) In 20 (40%) cases histopathology confirmed diagnosis while in 30 (60%) cases histopathology gave diagnosis.

DISCUSSION

Skin adnexal Neoplasms comprise a wide spectrum of benign and malignant tumors that exhibit morphological differentiation towards one or more types of adnexal structures found in normal skin. They are clustered according to their adnexal differentiation based on histological, ultrastructural and immunohistochemical analysis as Eccrine, Follicular, Apocrine and Sebaceous origin. However, the apparent differentiation is not always clear since some tumors display elements of mixed differentiation. The need for special and/or immunohistochemical stains in the evaluation of SAT varies from one case to another and can be helpful to demonstrate cytoplasmic glycogen contents and stromal hyalinised basement membrane that is present in certain cutaneous adnexal lesions. Hales colloidal iron stain for acid mucin is helpful in demonstrating iron deposits within apocrine lesions. IHC and ultrastructural ancillary studies may aid in establishing the tumor differentiation, but they have limited diagnostic value and yield.⁹⁻¹¹

In the present study it was observed that most of the SAT were benign (94%) which is similar to other studies done by Sirsat and Kail¹²(1964), Vaishnav and Dharkar¹³ (1974) and Reddy et al¹⁴ (1982).(Table 4) Tumors with follicular differentiation were the most common followed by tumors with eccrine and apocrine differentiation which is similar to study done by Krishnakanth et al¹⁵ (2015) and higher than study done by Samaila et al¹⁶ (2008) and Saha et al.⁷ Tumors were more common in females as compared to males with M:F ratio of 2:3, similar was noted in study by Jindal U.¹⁷ In a large study of 166 adnexal tumors of Skin by Yaqoob Y et al¹⁸ male to female ratio was almost equal.

CONCLUSION

Adnexal skin tumors have distinct histological patterns which differentiates them from other cutaneous tumors. Clinical diagnosis of adnexal tumors is extremely difficult because various adnexal tumors have similar clinical presentation and histopathological examination becomes essential in diagnosis. Although most of these tumors are benign, it is important to diagnose them accurately, if incompletely excised can recur and evaluation of margins is recommended.

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Source of Support: Nil.

Conflict of Interest: None Declared.

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Cite this article as: Geeta Pachori, Manisha Jain, Soniya Sanadhya, Tushar Bayla. A Study of Spectrum of Skin Adnexal Tumors in Ajmer Region. Int J Med Res Prof. 2017 Sept; 3(5):84-87. DOI:10.21276/ijmrp.2017.3.5.017