

Histopathological Study of Skin Adnexal Tumours—6 Years Study

KEYWORDS	adnexal tumors, pilosebaceous tumors,apoeccrine tumors					
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ABSTRACT Objective to determ Pradesh. Material and incidence of adnexal tu then findings were corr were benign and 18.33 48.33% (29/60), follow	: The aim of this study was to corre- nine its incidence in the Department Methods: 60 cases were included i Imors, age, and sex distribution. All oborated with special stains like PA 3% (11/60) were malignant adnexal wed by the hair follicle tumors 33.3	elate skin adnexal tumors with age, sex, and location and of Pathology at Kurnool Medical College, Kurnool, Andhra n this study from June 2010 to June 2016 with respect to the slides were stained with haematoxylin and eosin and 5 and reticulin wherever required. Results: 81.66% (49/60) tumors. Sweat gland tumors constituted the largest group 83% (20/60) and sebaceous gland tumors 18.33%(11/60).				

Overall male: female ratio was 1: 1.22. The commonest age group was 41–50 years and the commonest affected body part was head and neck region (65%, 39/60) followed by trunk (13.33, 08/60). Trichoepithelioma and Nodular hidradenoma were commonest benign tumors and sebaceous carcinoma, commonest malignant tumor seen. Conclusion: The incidence of benign skin adnexal tumors were more as compared to the malignant tumors. Malignant tumors were seen in older age group, usually over 50 years of age.

1.Introduction

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. They arise from multidirectional differentiation involving multipotential cells of the epidermis or appendageal structures. Differentiation is probably influenced by genetic potential, regional vascularity and molecular microenvironment⁽¹⁾.

Most of the benign SATs present as asymptomatic papules or nodules and often difficult to diagnose clinically however anatomic location, number and distribution of lesions provide important clue to the diagnosis^[2]. They are however confirmed by histopathology, and immunohistochemistry^[3]. This study was therefore undertaken to analyze adnexal tumors of the skin for their morphological, clinical, and histological features and to group them using the International Classification of World Health Organization (2006).

2. Material and Methods

The present study includes the 60 cases from June 2010 to June 2016, which were reported by the Department of pathology. The clinicopathological data was taken from the record office for the given period. Biopsy specimens were fixed in formalin and histopathology processing was done. Allthe sections were routinely stained with Haematoxylin and Eosin and special stains like PAS and reticulin were performed wherever required.

3. Results

In the present study, benign adnexal tumors constituted 81.66% (49/60) and malignant adnexal tumors were 18.33%(11/60). Sweat gland tumors constituted the largest group 48.33%(29/60), followed by the hair follicle tumors 33.33% (20/60) and followed by sebaceous gland tumors 18.33%(11/60) cases (Table 1).

 Table 1: Adnexal tumors according to the direction of differentiation.

Sr.no	Direction of dif- ferentiation	No. of cases	Percentage inci- dence (%)
1	Hair follicle tumors	20	33.33
2	Sebaceous gland tumors	11	18.33
3	Sweat gland tumors	29	48.33
	Total	60	100

The head and neck region was the most common site affected (65%, 39/60) followed by trunk (13.33%, 8/60) and upper limb (11.66%, 7/60). In head and neck region 36.66% (22/60) were located on the face followed by scalp in 21.66% (13/60). The lower limb region was least affected 5% (3/56). The male: female ratio was 1: 1.22 (Table 2).

Table 2: The site and sex distribution of observed adnexal tumors

Sr.no	Site of the tumor	Male	Female	Total	Inci- dence(%)
1	Scalp	5	8	13	21.66
2	Face	8	14	22	36.66
3	Neck	2	2	4	6.66
4	Trunk	5	3	8	13.33
5	Upper limb	4	3	7	11.66
6	Lower limb	2	1	3	5
7	Not specified	1	2	3	5
	total	27	33	60	100

Tumors were observed in all age groups, ranging

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from 8 to 75 years. However, the highest incidence was observed in the age group of 41-50 years (23.33%, 14/60) followed by age groups of 21-30(18.33%, 11/60) and 31-40 (18.33%, 11/60) years, respectively. (Table 3)

Table 3: Age incidence of individual adnexal tumors observed in the present study.

Age o	roups (in years)								
Sr.no	Tumors	1-10	11- 20	21- 30	31- 40	41- 50	51- 60	61- 70	>70
Hair fo	ollicular tumors								
1	Trichofollicu- Ioma			1		1			
2	Trichoepithe- lioma		2	2	1	1			
3	Trichoblastoma	1							
4	Trichoadenoma				1				
5	Pilomatricoma	1	1	1	1	1			
6	Trichilemmoma			1		1			
7	Proliferating trichilemmal cyst				1	1	1		
Sebac	eous gland tume	ors							
8	Sebaceous adenoma		1	1		1			
9	Sebaceous carcinoma					1	3	3	1
Sweat	gland tumors								
10	Apocrine hy- drocystoma					2			
11	Hidradenoma papilliferum				1				
12	Syringocys- tadenoma papilliferum		1	1					
13	Syringoma		1	1	2	1			
14	Cylindroma		1	1	1	1			
15	Eccrine po- roma			1	1	1	1		
16	Eccrine spirad- enoma				1	1			
17	Nodular hi- dradenoma		2	1	1	1	1		
18	Porocarcinoma						1		
19	Mucinous eccrine carci- noma						1	1	
	ITotal	12	19	111	111	114	18	14	11

The hair follicle tumors comprised of Trichoepithelioma, Pilomatricoma, Proliferating trichilemmal cyst, Trichilemmoma and Trichofolliculoma (Figure 1). Sebaceous glands tumors comprised of Sebaceous adenoma and Sebaceous carcinoma(figure 2). The sweat glands tumors are comprised of, Nodular hidradenoma, Syringoma, Eccrine poroma, Cylindroma, Apocrine hidrocystoma, Syringocystadenoma papilliferum and Hidradenoma papilliferum (Figure 1). Amongst the benign tumors; Trichoepithelioma and Nodular hidradenoma were the most common tumors representing 20% (12/60) cases. Trichoepitheliomas showed peak incidence between 11 and 40 years of age and was more common in females 10% (06/60). Nodular hidradenoma was observed in age ranging from11 to 50 years. Most of the patients were above 30 yrs of age with female preponderance 10%(06/60). Syringomas were seen with age group ranged from 11 to 50 years and more common in females 8.33%(05/60). Pilomatricoma came next, constituting 8.33%(05/60) cases (Table 3). Amongst the malignant tumors sebaceous carcinoma constituted 13.33%(08/60), Eccrine mucinous carcioma 3.33%(02/60) and Porocarcinoma 1.66%(01/60) (figure2). Most of them were occurring in people above 50 years of age.



Figure 1: (a) Trichoepithelioma: lobules of bland basaloid cells may show peripheral palisading, with well-formed horn cysts, with fibrotic stroma. (H&E X100). (b) Pilomatricoma: Eosinophilic shadow cells and few basophilic cells with keratinization. (H&E X100).(c) Nodular hidradenoma: multilobulated tumor, consisting of polyhedral cells with round nuclei with slightly basophilic cytoplasm and round cells with clear cytoplasm with small dark nuclei(H&E X100). (d) Syringoma: Dermis show, numerous tubular structures, walls are lined by two rows of epithelial cells. Some ducts have an epithelial elongation (tadpole appearance) (H&E X 400)



Figure 2: (a) Cylindroma: irregularly shaped islands of epithelial cells that fit together like pieces of a jigsaw puzzle, islands are surrounded by a hyaline sheath (H&E X100). (b) Sebacious carcinoma: lobular arrangements of cells consist of small undifferentiated eosinophilic cells and large cells with clear to foamy cytoplasm (H&E X100). (c) Eccrine mucinous carcinoma: numerous compartments, in which abundant amounts of mucin surround small islets of tumor cells (H&E X400). (d) Porocarcinoma: asymmetric cords and lobules of polygonal cells with central necrosis with dermal invasion (H&E X100).

4. Discussion

Incidence of benign tumors is more as compared to malignant cases. In the present study 81.66% (49/60) tumors were benign and 18.33% (11/60) tumors were malignant,which was also seen in studies of Radhika et al.^[4], Reddy et al.^[5] and Samaila ^[6] who reported 77.14%,

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69.41%, and 88.5% benign and 29.63%, 30.59%, and 11.5% malignant lesions, respectively. Nair^[7] observed that sweat glands tumors are the commonest followed by hair follicle tumors and sebaceous glands tumors. The present study also shows similar results. However, Radhika et al.^[4] and Samalia^[6] observed that sweat glands tumors are the commonest SATs followed by sebaceous glands tumors followed by tumors of hair follicle. Male : female ratio as observed by Nair 7 and Saha et al. 8 was 1 : 2.3 and 1 : 1.88, respectively. The present study also shows similar results (1 :1.22). Radhika et al. also observed that majority of the patients are in the third decade and females outnumbered males.^[4] Saha et al.^[8] observed the mean age of onset of SATs was 24.15 ± 8.44. Nair 7 observed the commonest age group of presentation was 11-20 years; however, in the present study, commonest Skin Cancer age group was 41-50 years followed by 31-40 years. Samalia^[6] observed that 46% of lesions were located in head and neck region which was also seen in our study. Song et al.observed that pilomatricoma was the most common benign tumor followed by dermoid cyst followed by steatocystomamultiplex, syringoma, and trichilemmal cyst [9] Radhika etal. observed that the most common benign tumor is nodular hidradenoma followed by sebaceous naevus.^[4] In the present study, most common tumors were Trichoepithelioma and Nodular hidradenoma followed by Syringoma.

5. Conclusion

In Indian population, the overall incidence of skin adnexal tumors is very low. The incidence of benign skin adnexal tumors is more as compared to the malignant ones. Most of the malignant tumors occur in older age group usually over 50 years of age. However benign tumors show a wide age variation. Skin adnexal tumors can occur anywhere in the body; however head and neck region constitutes the most common site. Majority of the tumors can be classified into different subgroups on the basis of light microscopy alone. Skin adnexal tumors showing sweat gland differentiation are seen more frequently. In our institutional study, Trichoepithelioma is the most common type of hair follicle tumor while Nodular hidradenoma is the commonest tumor with sweat gland differentiation. Amongst the tumors with sebaceous differentiation, sebaceous carcinoma (meibomian carcinoma) is commonest.

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