

A SPECTRUM OF SKIN ADNEXAL TUMORS

Sunitha.G ¹, Gouthami. S ^{*2}, T. Sheshagiri Rao ³.

¹ Assistant professor, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana State, India.

^{*2} Assistant professor, Dr. Patnam Mahender reddy institute of medical sciences, Narketpally, Nalgonda District, Telangana State, India.

³ Professor and HOD, Department of Pathology, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana State, India.

ABSTRACT

Background: Troublesome tumors (Skin adnexal tumors (SAT)) pose a major diagnostic difficulties because of their wide spectrum and variants, their rarity, differentiation along two or more adnexal lines and their complicated nomenclature to both the surgeon and the pathologist. Histopathology is the gold standard of diagnosis with immunohistochemistry playing a limited role.

Materials and methods: A Prospective study of skin adnexal tumors (n =25) diagnosed on histopathological examination over a period of 2 years (June 2015 to May 2017). All slides were stained with H & E.

Results: Majority of the patients are in the third and fourth decade. Females outnumbered the males. Twenty-two tumors are benign and 3 are malignant. Most common skin adnexal tumors are Hair follicle origin tumors comprising of 15cases (60%). In that most common benign tumor is Trichoepithelioma. Head and neck region is the commonest site involved.

Conclusion: Skin adnexal tumors are relatively rare. Benign adnexal tumors are more common than the malignant lesions. Histopathology is essential to confirm the diagnosis.

KEY WORDS: Hair follicle, Skin adnexal tumors, Trichoepithelioma, Eccrine poroma.

Address for correspondence: Dr. Gouthami. S, Flat no 407, Sri Krishna ambus apartments, Attapur, pillar no 118, Near Indian bank, Hyderabad, Telangana, India. **Mobile no:** 8978922001;

E-Mail: docgouthami@gmail.com

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INTRODUCTION

Histopathological study of neoplastic lesions of skin adnexae plays an important part in differentiating the tumors into benign, premalignant and malignant categories [1]. Skin appendages are sweat gland, sebaceous gland and hair follicle. Adnexal tumours arising from the skin are relatively uncommon malignancies worldwide, progressive increased incidences were observed since a decade [1].

Three most frequent primary skin cancers are

basal cell carcinoma, squamous cell carcinoma and malignant melanoma. In India, skin cancers constitute about 1-2% of all diagnosed cancers. Squamous cell carcinoma is the commonest form of skin cancer. The overall incidence of skin cancer varies from 0.5 to 2 per 1 lakh population [2].

Tumor and tumor like lesions arise from different components of skin such as surface epithelium, epidermal appendages and dermis, pose a major diagnostic difficulty to both the surgeon

and the pathologist. They pose a diagnostic challenge because of their morphologic overlap and biological heterogeneity [3]. The study is undertaken to study the various histopathological features in skin and adnexal tumors. Benign and malignant tumors if diagnosed early and treated have a higher rate of cure. The present study is primarily aimed at achieving early diagnosis with special emphasis on diagnosis of premalignant conditions.

MATERIALS AND METHODS

A Prospective study conducted in the department of Pathology, Kamineni Institute of Medical Sciences, Narketpally, from June 2015 – May 2017 with 25 cases of skin adnexal tumors. Benign and malignant lesions of the skin and adnexae were included in this study. Whole tissue was grossed and embedded for routine histopathological processing. Gross measurement of tissues varied from 5mm to 10mm. For histological examination, 10% formalin fixed embedded representative tissue sections were taken and stained with Haematoxylin and Eosin (H&E).

Haematoxylin and Eosin method: Sections were deparaffinised and hydrated through graded alcohol to water. Sections were stained with alum haematoxylin for 5-15 minutes and washed in running tap water until sections “blue” for 5min. Differentiation done in 1% acid alcohol (1%HCL in alcohol) for 5-10 sec. Washed in tap water until sections ‘blue’ (10-15 min) or ‘blue’ by dipping in an alkaline (ammonia water) solution followed by 5 min tap water wash. Stained in 1% eosin Y for 5min and washed in running tap water for 1-5 min. Dehydrated through alcohol. Sections are cleared with xylene and mounted with mountant. Nuclei stain blue and cytoplasm stain pink.

RESULTS

During the study period 25 cases of skin adnexal tumors are diagnosed on histopathological examination. There are 12 males (48%) and 13 females (52 %) (a total 25 no) were included in the study, most common age group is 20 – 40 years (40%), and Head and neck is the most common affected site comprising of 23 cases (92%). Out of 25 cases of the Adnexal

tumors, 22 cases are benign (88%) and 3 cases are malignant (12%). The tumors are further divided into hairfollicles, eccrine, sebaceous and apocrine gland differentiation.

Table 1: Origin wise distribution of skin adnexal tumors (n = 25).

Type of tumor	Number of cases	Percentage of cases
Hairfollicle	15	60%
Eccrine	5	20%
Sebaceous	4	16%
Apocrine	1	4%
Total	25	100%

In this study showing that most common skin adnexal tumors are Hair follicle origin tumors comprising of 15cases (60%).

Table 2: Sub-classification of Pilar tumors (n = 15).

Pilar tumors	Number of cases	Percentage of cases
Trichoepithelioma	5	33.33%
Trichofolliculoma	3	20%
Trichilemmal cyst	3	20%
Trichoblastoma	1	6.66%
Pilomatricoma	1	6.66%
Proliferating Trichilemmal tumor	1	6.66%
Malignant proliferating pilar tumor	1	6.66%
Total	15	100%

Hair follicle origin tumors are the most common comprising of 60% (Table 1), of which Trichoepithelioma (33.33%) is most common among benign tumors and Malignant proliferating pilar tumor (6.66%) is the most common among malignant tumors. (Table 2).

Table 3: Sub-classification of Eccrine tumors (n = 5).

Eccrine tumors	Number of cases	Percentage of cases
Eccrine poroma	2	40%
Syringocystadenofibroma	1	20%
Eccrine spiradenoma	1	20%
Eccrine duct carcinoma	1	20%
Total	5	100%

Among 5 tumors of Eccrine origin, Eccrine poroma (40%) is most common benign tumor. Only one malignant tumor is encountered i.e., Eccrine duct carcinoma (20%) (Table 3).

Table 4: Sub-classification of Sebaceous tumors (n = 4).

Sebaceous tumors	Number of cases	Percentage of cases
Sebaceous hyperplasia	1	25%
Nevus sebaceous	1	25%
Calcified sebaceous cyst	1	25%
Sebaceous carcinoma with squamoid differentiation	1	25%
Total	4	100%

Among tumors with Sebaceous differentiation, a total number of 4 cases are seen of which, 3 benign tumors (75%) and one malignant tumor i.e., Sebaceous carcinoma (25%) is observed (Table 4).

Fig. 1: Trichoepithelioma showing basaloid cells that form primitive hair follicle germ cell structures with fibromyxoid stroma (H&E x40).

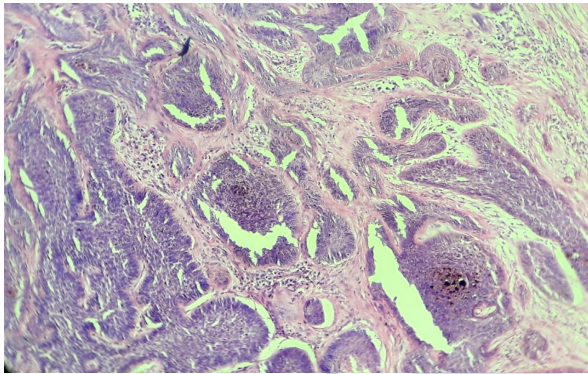


Fig. 2: Pilomatrixoma showing basaloid and ghost cells (H & E x40).

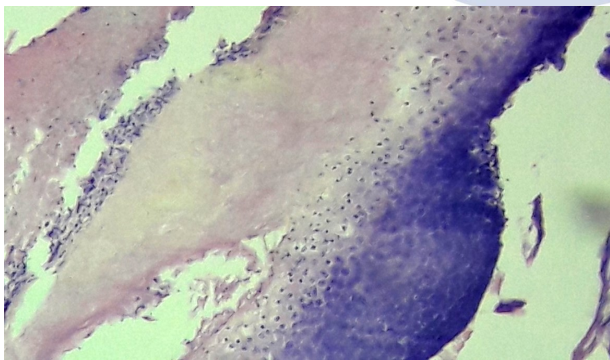
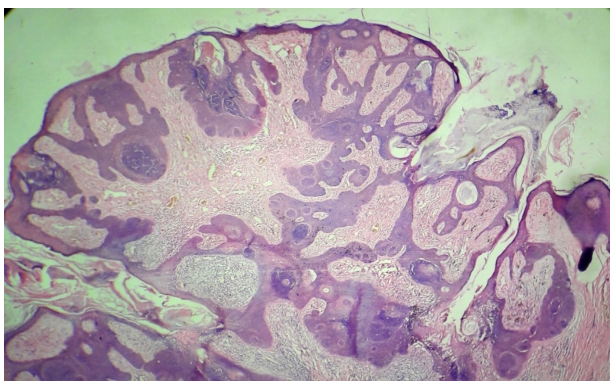


Fig. 3: Trichofolliculoma showing proliferating epithelium with central dilated follicle (H&E x40).



DISCUSSION

Adnexal tumors of the skin are rare neoplasms which show differentiation towards pilar, sebaceous, eccrine or apocrine structures. They are believed to originate from pluripotent stem cells in epidermal niches and a single tumor can show more than one line of differentiation [4]. SAT encompass wide spectrum of benign and malignant tumors that differentiate toward one or more adnexal structures found in normal skin. Overall incidence of SATs is low yet they can be challenging to diagnose [1].

During the 2 years of study period 25 cases of skin adnexal tumors diagnosed on histopathological examination were included in the study. Most common age group is 20 – 40 years (40%), which is similar to Kaur K et al [5] who observed that most common age group affected was 20 – 39 years. In the present study 12 males (48%) and 13 females (52%) were included and ratio is 1:1.08 similar to studies by Nair et al [6] and Saha et al [7] with 1:2.3 and 1:1.88 respectively. Radhika et al [8] also observed that majority of the patients are females. Yakoob et al [9] observed that males (51.21%) outnumbered the females (48.79%). Samaila et al. [10], Shuba P Bhat et al [11], Deka M, et.al [12] observed that head and neck is the commonest site affected which is similar to the present study. Out of 25 cases of the Adnexal tumors, 22 cases are benign (88%) and 3 cases are malignant [12%], which was also seen in studies of Radhika et al [8] and Samaila et al. [10] reported (77.14%) and (88.5%) benign, (29.63%) and (11.5%) malignant lesions respectively.

The tumors are further divided into hair follicles, eccrine, sebaceous and apocrine gland differentiation. In the present study majority of the tumors are found to be of hair follicle origin (60%) followed by eccrine origin (20%), sebaceous (16%), and apocrine (4%), which is same as Deka M, et.al [12] observed that most common tumors are of hair follicle origin (43.48%). Other authors Nair et al [6] observed that sweat gland tumors are the commonest followed by hair follicle tumors and then sebaceous gland tumors. Radhika et al [8] and Samaila et al. [10] observed that sweat gland

tumors are the commonest skin adnexal tumors followed by sebaceous gland tumors followed by tumors of hair follicle. Shuba P Bhat et al [11] observed that eccrine tumors are the most common (55%) followed by hair follicle tumors (25%) and 10% each of apocrine and sebaceous origin tumors.

In the present study, most common tumor is Trichoepithelioma followed by Trichofolliculoma and Trichilemmal cyst. Song et al [13] observed that Pilomatrixoma was the most common benign tumor followed by dermoid cyst followed by steatocystoma multiplex, syringoma and trichilemmal cyst. Radhika et al [7] observed that most common benign tumor is nodular hidradenoma followed by sebaceous naevus. Among tumors with Apocrine origin, only one case i.e., Apocrine hidradenoma is seen. Our results were comparable with study done by Deka M, et.al [12] wherein hair follicle tumors are more common, in contrast to the study done by Jeyanthi et.al [14] where the study shows large group of sweat gland tumors.

Trichoepithelioma is the most common benign tumor of the hair follicle origin in the present study with microscopic features showing basaloid cells (like cylindroma that form primitive hair follicle germ structures with fibromyxoid stroma. Cells are often in fronds, may have papillary mesenchymal bodies (Figure 1). Pilomatrixoma on microscopy showing biphasic pattern of keratinized ghost cells and basaloid cells. Case also showed giant cell reaction (Figure 2). Trichofolliculoma on microscopy revealed dilated hair follicle arising from surface epithelium with numerous secondary hair follicles arising from it (Figure 3). Sebaceous carcinoma on microscopy showing large pleomorphic cells with multivacuolated clear cytoplasm and at a foci showing squamoid differentiation is seen (Figure 4).

CONCLUSION

Skin adnexal tumors are rare neoplasms and the diagnosis of these lesions are difficult because of clinical and histopathological overlapping with other lesions of the body. The incidence of benign skin adnexal tumors is more as compared to the malignant ones, which correlates with other studies. Skin adnexal

tumors can occur anywhere in the body. However, in our study head and neck region constitutes the commonest site with tumors showing hair follicle differentiation more frequently seen compared to other structures, that too Trichoepithelioma is the most common tumor. To conclude adnexal tumors of the skin are uncommon and are mostly benign, so surgical excision will suffice in most cases. The diagnosis of skin adnexal tumors in each case will be established by the study of histopathological findings. Histopathology is the gold standard for diagnosis of these tumors.

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