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Pathology

HISTOMORPHOLOGICAL SPECTRUM OF SKIN ADNEXAL TUMORS- A STUDY AT TERTIARY CARE CENTRE

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ABSTRACT

Introduction : Cotton D referred adenexal skin tumours as "troublesome tumours," as it pose a significant diagnostic challenge for both surgeons and pathologists because they encompass a wide range of skin epithelial tumours, including hamartoma, hyperplasia, benign, and malignant tumours that arise from or differentiate toward adenexal epithelial structures. Multiple tumours are generally associated with an inherited disease, such as multiple trichilemmomas in Cowden syndrome and sebaceous adenomas in Muir–Torre syndrome.

Aim and Objective: To study the histopathological spectrum of skin adnexal tumors at a tertiary care centre

Methodology : This study is a descriptive observational type of study done at Jhalawar medical college, jhalawar, Rajasthan , Department of Pathology during October 2020 to March 2021 on patients with skin adnexal tumors.

Result : In this study 75% of study subjects were solid, 15% were solid and cystic and 10% were cystic 30% study subjects were had Nodular hidreadenoma, 20% subjects had Pilomatricoma, 15% subjects had Ecrine poroma, 10% each had Trichoepithelioma, and Ecrine porocarcinoma, whereas 5% subjects each had Trichoblastoma, Trichofolliculoma and Eccrine spiradenoma. 40% subjects had Basaloid pattern, 30% had Basaloid and clear cell pattern. 55% subjects were pilar, 30% were eccrine,10% shows sebaceous tumour and only 5% had apocrine.

Conclusion : Majority of adnexal tumor were solid. Nodular hidradenoma is the most frequently encountered tumor among all skin adnexal tumors. Skin adnexal tumors cannot be diagnosed on clinical grounds only and histopathological diagnosis plays a major role in diagnosing these tumors.

KEYWORDS : Adnexal tumor, Pilomatricoma, skin, Eccrine

INTRODUCTION

The skin adnexa is made up of a variety of cells that can lead to a variety of cancers. Sebaceous glands, eccrine and apocrine sweat glands, and hair follicles are among them. SATs are most typically found in the head and neck, trunk, and extremities. Solitary or numerous papulonodular or cystic lesions are possible. Multiple tumours can be used as a sign of internal visceral cancer. Although most SATs are benign, tumours that are locally aggressive can mimic primary cutaneous neoplasms. Malignant SATs, on the other hand, are uncommon and must be distinguished from cutaneous metastases. (1)

Cotton D referred to adenexal skin tumours as "troublesome tumours," and they pose a significant diagnostic challenge for both surgeons and pathologists because they encompass a wide range of skin epithelial tumours, including hamartoma, hyperplasia, benign, and malignant tumours that arise from or differentiate toward adenexal epithelial structures. Multiple tumours are generally associated with an inherited disease, such as multiple trichilemmomas in Cowden syndrome and sebaceous adenomas in Muir–Torre syndrome. (2) Malignant skin adnexal tumours are uncommon, locally aggressive, and can lead to nodal involvement and distant metastases, all of which have a bad prognosis. As a result, establishing a cancer diagnosis in SAT is critical for both therapeutic and prognosis considerations. (3)

Skin ATs are infrequently found on fineneedle aspiration cytology because most doctors prefer to diagnose suspected skin ATs by excisional biopsy because they are easily accessible (FNAC). However, FNAC can be very useful in distinguishing them from metastatic carcinomas and sarcomas, which are almost always included in the differential diagnosis. On FNAC, recognising that the skin lesion is a cutaneous AT and, if possible, subtyping it enables for proper patient management and follow-up. (4)

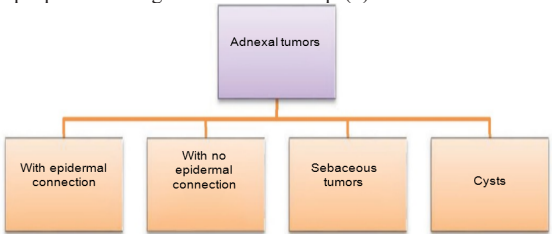


Figure 1: General approach to adnexal tumors. (5)

The spectrum ranges from a benign adnexal tumour that is cured with excision to a malignant counterpart that is locally aggressive and has a potential for distal metastasis. These adnexal tumours arise from the pluripotent stem cells that differentiate along one or more primary adnexal structures including eccrine ,follicular, apocrine and sebaceous glands or may differentiate along multiple cell lines .Although the site and distribution of the lesions provide some clue to the diagnosis, histopathology is indispensable in the diagnosis of SATs.(6)

The aim of the current study was to recognize various histomorphology of skin adnexal tumors, their frequency, age and site distribution.

AIM OF THE STUDY

To study the histopathological spectrum of skin adnexal tumors at a tertiary care centre.

MATERIAL AND METHODS

This study is a descriptive observational type of study done at Jhalawar medical college, jhalawar, Rajasthan , Department of Pathology during October 2020 to March 2021 on patients with skin adnexal tumors.

INCLUSION CRITERIA

All skin biopsy diagnosed as skin adnexal tumors

EXCLUSION CRITERIA

Inflammatory condition, inadequate biopsy, cyst and tumor like lesions. Statistically analysis is done.

METHODOLOGY

Patients who were diagnosed with skin adnexal tumors were invited to take part in the study . This study, done on them was explained in detail to them. An informed consent was obtained. Patients fulfilling the inclusion criteria were listed.

RESULTS

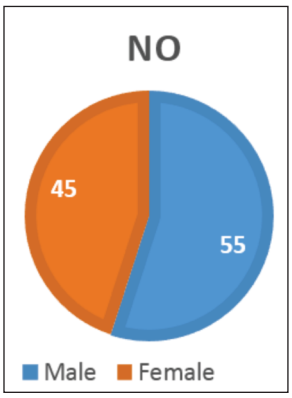
Total of 20 cases of skin adnexal tumors were included in the present study. This study includes the cases from June 2020 to June 2021, totally 12 months duration. All cases belong to the department of pathology, Jhalawar medical college, jhalawar , Rajasthan

Table 1: Age distribution of cases

Age group (years) 1-10	No of cases (n) 2	Percentage (%) 10
11-20	4	**20**
21-30	4	**20**
31-40	5	**25**
41-50	3	**15**
51-60	2	**10**
Total	**20**	**100**

Table 1 shows the distribution of study subjects as per the age. Maximum 25% study subjects were in the range 31-40 yrs, 20% subjects were in the range of 21-30 yrs, and 11-20 yrs, 15% subjects were in the range of 41-50 yrs, whereas 10% study subjects were in the range of 51-60 yrs and 1-10 yrs respectively.

Graph 1: Distribution of patients according to gender



Graph 1 shows distribution of patients according to gender. Out of 20 cases studied, 55% were females and 45% were males.

Table 2: Distribution of skin adnexal tumors according to histomorphological pattern

Gross findings	Number of cases	% of cases
Solid	15	**75%**
Solid and cystic	3	**15%**
Cystic	2	**10%**
Total	**20**	**100%**

Table 2 shows distribution of skin adnexal tumors according to histomorphological pattern. 75% of study subjects were solid, 15% were solid and cystic and 10% were cystic.

Table 3: Distribution of tumor according to differentiation

Tumour catagories	No. of cases(n)	Percentage(%)
Eccrine	6	**30**
Pilar	11	**55**
Sebaceous	02	**10**
Apocrine	**01**	**5**

Table 3 shows distribution of tumor according to differentiation. 55% subjects were pilar, 30% were eccrine,10% shows sebaceous tumour and only 5% had apocrine.

Table 4: Distribution of tumor according to location

Site	Number of cases (n)	Percentage (%)
Pilomatricoma	04	**20**
Nodular hidreadenoma	06	**30**
Ecrine poroma	03	**15**
Trichoepithelioma	02	**10**
Ecrine porocarcinoma	02	**10**
Trichoblastoma	01	**05**
Trichofolliculoma	01	**05**
Eccrine spiradenoma	01	**05**
Total	**20**	**100**

Table 4 shows distribution of tumor according to location. 30% study subjects were had Nodular hidreadenoma, 20% subjects had Pilomatricoma, 15% subjects had Ecrine poroma, 10% each had Trichoepithelioma, and Ecrine porocarcinoma, whereas 5% subjects each had Trichoblastoma, Trichofolliculoma and Eccrine spiradenoma.

Table 5: Distribution of skin adnexal tumors to according cellular morphology

Microscopic pattern	Number of cases	% of cases
Basaloid pattern	08	**40%**
Clear cell pattern	01	**5%**
Squamoid pattern	02	**10 %**
Basaloid and clear cell pattern	06	**30%**
Basaloid and squamoid pattern	02	**10%**
Squamoid and clear cell pattern	01	**5%**
Total cases	**20**	**100%**

Table 5 shows distribution of skin adnexal tumors according to cellular morphology.

40% subjects had Basaloid pattern, 30% had Basaloid and clear cell pattern, 10% each had Squamoid pattern and Basaloid and squamoid pattern.whereas 5% study subjects had Clear cell ttern and Squamoid and clear cell pattern.

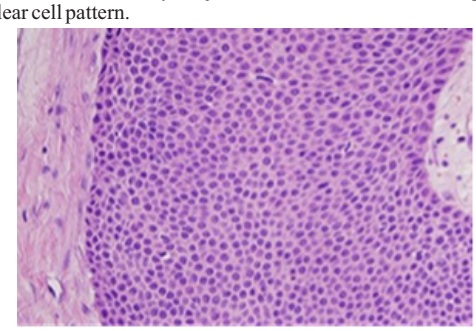


Figure 1: Nodular hidradenoma

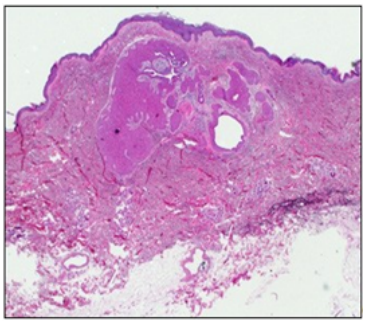


Fig 2 : Pilomatrixoma

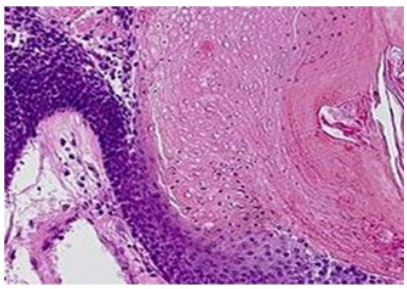


Fig 3: Poroma

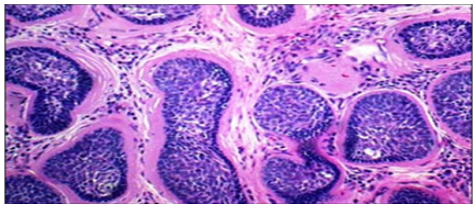


Fig 4 : cylindroma

DISCUSSION

Skin adnexal tumors, however uncommon, have been recognized since the late nineteenth century. We also noticed that cutaneous adnexal tumors appear to be relatively infrequent. It's thought that they have a hereditary basis. P53 mutations and Mendelian inheritance are

both key contributors. These tumors develop from either primary epithelial germ cells, pluripotent cells, or cells from a pre-existing structure.

In the present study maximum number of cases belonged to age-group of 31-40years (23.8%) closely followed by 11-20 & 21- 30 years age group (21.4% each). In a study by **G Jeyanthi** et al (2016)(6) the highest incidence was observed in the 51 to 60 age group. (9/28 cases , 32.1 %) followed by 61 to 70 age group (6/28 21.4 %). In a study by **Garima** et al (2019)(2) most common age group affected range from 41-60 years (31.2%, 18/57) and the mean age observed was 45 years.

In the presnt study maximum number of tumor were found on scalp followed by face (27.9%). Similarly scalp tumor were most common in study by **G Jeyanthi**. et al (2016)(6). In a study by **Garima** et al (2019)(2) Head and neck (47.5%, 27/57) was the most common site involved in both males and females with a predominance in the facial region 21.1% (12/57). In a study by **HK Manjunath** et al (2020)(7) most common site of presentation which was the head and neck, including face and scalp. Similar findings where majority tumor were seen in head and neck region was seen in a study by **Megha Bansal** et al(2019)(8).

Pilar differentiation (52.4%) was most common in the present study. In a study by **G Jeyanthi**. et al (2016)(6) Sweat gland tumours constituted the largest group (17/28 cases, 61 %) followed by hair follicle tumours (6/28, 21 %) and sebaceous tumours .(4/28,14%). In a study by **Nirali Amin** et al (2016)(3) the sweat gland tumors formed the largest group involving 70% of cases followed by the hair follicle tumors, followed by sebaceous gland tumors. The sweat gland tumors formed the largest group involving 70% of cases in a study by **Neeraja Barve** et al (2017)(9)

In the present study females were 53% and males were 47%. In a study by **Amany Mohammed Rabie** et al (2020)(1) there were 11 males (61.1%) and 7 females (38.9%) with a male: female ratio of 1.57:1. Similar female prepondace was seen in a study by **Amita Arora** et al (2018)(4) where Male: Female ratio was 1:1.75. Male to female ratio in a study by **HK Manjunath** et al (2020)(7) was 1.47:1. and in study by **Nirali Amin** et al (2016)(3) was 1:1.27. In a study by **Sailendra K. Thakuria** et al (2020)(10) out of 25 cases, they found that females outnumbered males (10 males and 15 females).

In the present study of the total cases studied 20, 15 of them were solid, 3 were solid and cystic and 2 were cystic. In a study by **Goutami Das Nayak** et al (2020)(11) cysts(70%), nodules (25%) and papules (5%) were reported. In a study by **Prakriti Shukla** et al (2016)(12) out of these thirty-nine cases, 86.84% of the patients presented with nodule, 7.90% presented with papule, and 5.26% showed an eczematous lesion. The most common (44.3%) type of lesion was nodular in a study by **Paudyal P** et al (2016)(13).

In a study by **Garima** et al (2019)(2) Pilomatrixoma was the most common tumor encountered in the study which belong to tumors with follicular differentiation. Other tumors with follicular differentiation were 3 cases of trichoepithelioma, 2 cases of trichilemomma and 1 case each of proliferating trichilemmal cyst and trichofolliculoma identified. Similar results were observed by **Sahida** et al.(2017)(14); **Prasad B.V** et al.(2018)(15); **Agrawal S** et al. (2018)(16). Nodular hidradenoma was reported as the commonest benign tumor by **Vani** et al., (2015)(17); **Radhika K** et al., (2013)(18).In a study by **Goutami Das Nayak** et al (2020)(11) Trichilemmal cyst (30.2%) constituted the maximum cases of pilar origin. Clear cell hidradenoma; pilomatricoma were most common in **Sharma** et al. (2014)(19)

CONCLUSIONS

We conclude that skin adnexal tumors are relatively rare. Most common range of age was 31-40 yrs, There is slight Female preponderance. Head and neck are frequent sites for occurrence of these tumors, among which face is the commonest site. Majority of adnexal tumor were solid. Nodular hidradenoma is the most frequently encountered tumor among all skin adnexal tumors. Skin adnexal tumors cannot be diagnosed on clinical grounds only and histopathological diagnosis plays a major role in diagnosing these tumors.

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Conflict of Interest : NA

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