ISSN: 0975-833X

*Available online at http://www.journalcra.com*

*International Journal of Current Research*
*Vol. 9, Issue, 07, pp.54782-54785, July, 2017*

**INTERNATIONAL JOURNAL OF CURRENT RESEARCH**

## RESEARCH ARTICLE

# TO STUDY HISTOPATHOLOGICAL PATTERN OF SKIN ADNEXAL NEOPLASMS

***Dr. Jibran Amin, Dr. Lateef Ahmad Wani, Dr. Suhail Farooq, Dr. Baba Iqbal Khaliq and Dr. Farzana Manzoor**

Department of Pathology, Govt. Medical College, Srinagar, India

**ARTICLE INFO**

*Article History:*
Received 14th April, 2017
Received in revised form
29th May, 2017
Accepted 04th June, 2017
Published online 31st July, 2017

*Key words:*

Skin Adnexal Neoplasms,
Sebaceous Carcinoma,
Pilomatricoma.

**ABSTRACT**

**Aim:** To study histopathological pattern of skin adnexal neoplasms.
**Materials and Methods:** The study was conducted in the Department of Pathology, Govt. Medical College and Associated Hospitals Srinagar for a period of 2 years. It was partly a retrospective study and partly prospective. Histopathological examination was done on H&E stained slides and corroborated with special stains wherever required.
**Results:** A total of 92 cases of appendageal tumors were studied. 87 were benign and 5 were malignant with male to female ratio of 1.05:1. Tumors with Follicular differentiation comprised the maximum number of cases followed by tumors with sebaceous differentiation and sweat gland differentiation. The maximum numbers of benign cases were observed in 10-19 years of age group. All malignant tumors were found above 50years of age. Mean age of presentation of adnexal tumors was 31.7 years. Head and neck was the most common site.
**Conclusions:** Skin adnexal tumors are a relatively rare group of tumors with considerable clinical and histological overlap. In our study, hair follicle tumors were the commonest group which is a different finding from the other studies where sweat gland tumors were common.



**Citation: Dr. Jibran Amin, Dr. Lateef Ahmad Wani, Dr. Suhail Farooq, Dr. Baba Iqbal Khaliq and Dr. Farzana Manzoor, 2017.** "To study histopathological pattern of skin adnexal neoplasms", *International Journal of Current Research*, 9, (07), 54782-54785.

## INTRODUCTION

Skin adnexal tumors (SAT) are a large and diverse group of benign and malignant neoplasms which exhibit morphological differentiation towards one of the different types of adnexal epithelium present in normal skin: pilosebaeceous unit, eccrine and apocrine. SAT may display more than one line of differentiation (hybrid/composite tumors), rendering precise classification of these neoplasms difficult (Alsaad and Obaidat, 2007). These tumors are derived from multipotential undifferentiated cells present within the epidermis or its appendgeal structures and the histologic features of a tumor are related to the activation of molecular pathways responsible for forming the mature adnexal structures (Sharma *et al.,* 2014). The diagnosis of these mixed skin adnexal tumors relies on histological evaluation, and they are usually classified according to the predominant morphological component. Adnexal tumors arising from the skin are usually missed clinically as most of these present as asymptomatic papules or nodules. Anatomic location, number and distribution of lesions provide important clue but histopathology is invaluable for confirmation of the diagnosis. Diagnosis of skin adnexal tumors is possible by performing an elliptical skin biopsy, submitting for haematoxylin and eosin (H&E) staining and histochemistry. Most SAT are benign, but a malignant counterpart of every SAT has been described (Sharma *et al.,* 2014). Malignant skin adnexal tumors are rare, locally aggressive and have the potential for nodal involvement and distant metastasis with a poor clinical outcome. Therefore establishing a diagnosis of malignancy in SAT is important for therapeutic and prognostic purposes (Sharma *et al.,* 2014).

## MATERIALS AND METHODS

The present study of the skin adnexal tumors was carried out in the department of pathology, Govt. Medical College and Associated Hospitals Srinagar. The study was conducted for a period of 2 years from Jan 2015 to Dec 2016. It was a retrospective study of 1 year and a prospective study of 1 year. The material for this study comprised of punch biopsies and surgically excised specimens received from the departments of Dermatology and Surgery. The material was subjected to meticulous gross and microscopic examination. The histopathological examination was done on formalin fixed paraffin embedded tissues. Haematoxylin and Eosin stained sections were examined and few special stains like PAS and reticulin were performed wherever required. The clinical profile

**Corresponding author:* **Dr. Jibran Amin,**
Department of Pathology, Govt. Medical College, Srinagar, India.

including age, sex, site of each case were recorded. The tumors were studied and categorized according to WHO classification.

## RESULTS

During the study period, 92 adnexal tumors of skin were diagnosed on histopathological examination (Table 1). There were 87 benign and 05 malignant tumors (Fig 1).

**Table 1. Types of skin adenexal tumors**

| Type of tumor | No of cases | Percentage |
|---|---|---|
| Hair Follicular tumors | 35 | 38.04% |
| Sebaceous gland tumors | 26 | 28.26% |
| Sweat gland tumors | 25 | 27.17% |
| Unclassified | 06 | 06.52% |

**Table 2. Comparative percentage of Skin Adenexal tumors in various studies**

| Type | Vani et al | Amin et al | Arvind et al | Jindal et al | Present study |
|---|---|---|---|---|---|
| Hair Follicular tumors | 37.25 | 22 | 47.78 | 44 | 38.04% |
| Sebaceous gland tumors | 19.60 | 10 | 25.26 | 4 | 28.26% |
| Sweat gland tumors | 43.13 | 68 | 26.66 | 52 | 27.17% |

In the present study, skin adnexal tumors were identified in all age groups ranging from 1 to 75 years (Table 3). However, the highest incidence was observed in the age group of 10-19 years followed by age groups 20-29 years and 30-39 years. All malignant tumors in the study were found above 50 years of age. Mean age of presentation of adnexal tumors was 31.7 years. There were 47 male patients and 45 female patients (Fig 2).

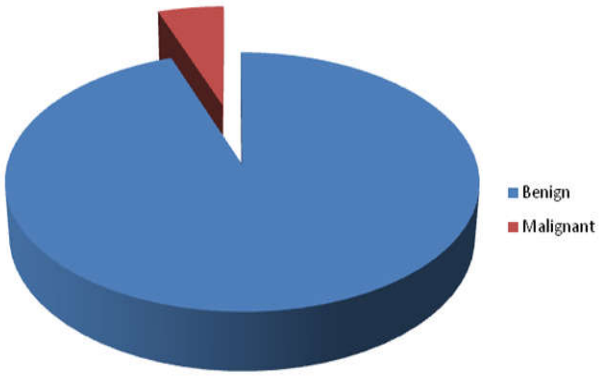


**Figure 1. pie chart showing proportion of benign and malignant cases**

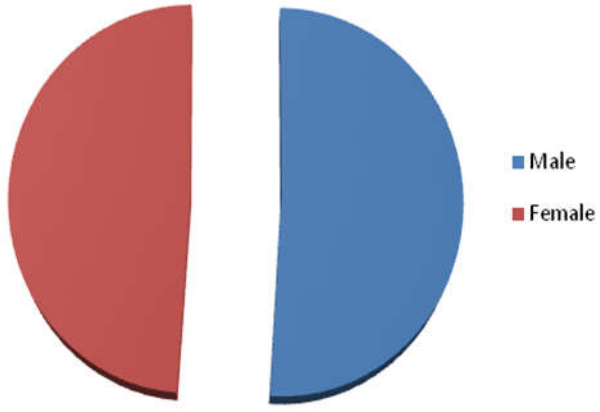


**Figure 2. Pie chart sowing proportion of male and female patients**

**Table 3. The age distribution of skin adnexal tumors**

| Age group in years | No of cases | Percentage Incidence(%) |
|---|---|---|
| <10 | 04 | 04.35 |
| 11-20 | 27 | 29.35 |
| 21-30 | 15 | 16.30 |
| 31-40 | 14 | 15.22 |
| 41-50 | 09 | 09.78 |
| 51-60 | 11 | 11.96 |
| 61-70 | 10 | 10.87 |
| >70 | 02 | 02.17 |
| Total | 92 | 100 |

There was a slight male predominance over the female with male to female ratio of 1.05:1. 56(60.9%) cases were located in head, neck and face region with 29 cases on the face, 21 on the scalp and 6 on the neck (Table 4). Trunk was the next common site with 19(20.6%) followed by upper limb with 12 (13%) and lower limb with 5(5.45%) cases. The hair follicle tumors formed the largest group involving 37% of cases followed by the sebaceous gland tumors (28.3%), followed by sweat gland tumors (27.2%). Amongst the benign tumors, pilomatricoma was the most common tumor. Sebaceous carcinoma was the most common malignant adnexal tumor reported in our study. Of the 35 tumors of hair follicle origin 34 were benign in this study (Table 5).

**Table 4. The site and sex distribution of skin adnexal tumors**

| S.No. | Site of tumor | Male | Female | Total | Percentage Incidence(%) |
|---|---|---|---|---|---|
| 1 | Head & Neck | | | | |
| | Scalp | 12 | 9 | 21 | 22.83 |
| | Face | 16 | 13 | 29 | 31.52 |
| | Neck | 03 | 03 | 06 | 06.52 |
| 2 | Trunk | 09 | 10 | 19 | 20.65 |
| 3 | Upper Limb | 04 | 08 | 12 | 13.04 |
| 4 | Lower Limb | 03 | 02 | 05 | 05.43 |
| Total | | 47 | 45 | 92 | 100 |

**Table 5. Different adenexal lesions in the present study**

| Type | No of cases |
|---|---|
| Hair follicle | |
| Pilomatricoma | 34 |
| Trichelemmal carcinoma | 01 |
| Sebaceous gland | |
| Nevus Sebaceous | 17 |
| Sebaceous hyperplasia | 04 |
| Sebaceous Adenoma | 02 |
| Sebaceous carcinoma | 03 |
| Sweat gland | |
| Eccrine spiradenoma | 07 |
| Eccrine Poroma | 05 |
| Condroid Syringioma | 05 |
| Syringocystdenomapapilliferum | 04 |
| Tubular Adenoma | 01 |
| Apocrine cylindrioma | 01 |
| Apocrine hydrocystoma | 01 |
| Nodular Hydradenoma | 01 |
| unclassified | 06 |
| total | 92 |

Pilomatricoma (n=34) accounted for the majority of the lesions in this group. One case was reported as Trichelemmal carcinoma. Of the 26 cases of tumors of sebaceous gland origin, 23 cases were benign and 3 cases were malignant. Nevus sebaceous was the most common benign tumor (18.5%) followed by sebaceous hyperplasia and sebaceous adenoma while all the malignant tumors were found to be sebaceous carcinoma (3.3%). All the 25 cases of tumors of sweat gland origin were benign in this study. Eccrine spiradinoma

accounted for the maximum number of cases (n=7, 7.6%) followed by eccrine poroma (n=5), condroid syringioma (n=5) and Syringiocystdenoma papilleferum (n=4).

## DISCUSSION

Skin adnexal tumors (SAT) are a large and diverse group of benign and malignant neoplasms which exhibit morphological differentiation towards one of the different types of adnexal epithelium present in normal skin: pilosebaeceous unit, eccrine and apocrine. SAT may display more than one line of differentiation (hybrid/composite tumors), rendering precise classification of these neoplasms difficult (Alsaad and Obaidat, 2007). Jayalakshmi and Looi 1996 reported 29.8 years as the mean age of presentation in their study. Gayathri *et al.,* 2012 reported 35.2 years as the mean age of presentation in their study. Arvind GV et al reported 35.8 years as mean age of presentation in their study. In the present study, the mean age of presentation was 31.7 years which is in concordance with the above series. Sirsat*et al,* 1964 in their study showed male to female ratio of 1.3:1 among adnexal tumors in 49 cases. Yaqoob et al., 2003 showed similar result.Male**:**Female ratio was reported to be 1.07:1 by Ankit *et al.,* 2014 In our study, the M:F ratio was 1.05:1 which is in concordancewith the above mentioned studies. Majority of other studies showed female preponderance (Gayathri *et al.,* 2012; Vaishnav and Dharkar, 1974; Nair, 2008; Jindal and Patel, 2012; Radhika *et al.,* 2013). In our study, skin adnexal tumors were found in the age group of 1-75 years, with peak in the 10-19 years age group which is less as compared to other studies. Skin adnexal tumors have a wide range of age distribution. Ankit et al observed that commonest age of presentation was 51-60 years whereas Radhika et al found third decade to be the most common age of occurrence (Sharma *et al.,* 2014; Radhika *et al.,* 2013). In our study, 56(60.9%) cases were located in head, neck and face region with 29(31.5%) cases over the face, 21(22.8%) over the scalp and 6(6.5%) over the neck. Trunk was the next common site with 19(20.6%) followed by upper limb with 12 (13%) and lower limb with 5(5.45%) cases. This is in concordance with the studies done by Amin *et al.,* 2016 Vani *et al.,* 2015; Arvind *et al.,* 2016; Narhire *et al.,* 2016. Our study showed that the hair follicle tumors formed the largest group involving 37% of cases followed by the sebaceous gland tumors (28.3%), followed by sweat gland tumors(27.2%) which is in concordance with the study of Arvind *et al.,* 2016; Jayalakshmi and Looi, 1996.

In most of the other studies Percentage of sweat gland tumors (Eccrine> Apocrine) was the highest (Table 2). In the present study, 94.56% of skin adnexal tumors were benign and 5.44% were malignant which was in tandem with studies ofRadhika et al, Ankit et al,Samaila,arvind et al,Amin N et al who reported 77.14%, 80.36%, and 88.5%,94.44%,98% benign and 29.63%, 19.64% and 11.5%,5.56%, 2% malignant lesions respectively (Sharma *et al.,* 2014; Radhika *et al.,* 2013; Amin *et al.,* 2016; Arvind *et al.,* 2016; Samaila, 2008). In our study, there were 34 cases of pilomatricomawith an overall incidence of 36.96%, highest among the incidence of all the skin adnexal tumors. This is in parallel with VV Narhire, Arvind et al;Sirsat et al series and Vaishnav et al series. Kartha et alseries reported pilomatricoma in 20 out of 82 cases (24.4%) of skin adnexal tumors studied which is similar to our study (Sirsat and Kail, 1964; Vaishnav and Dharkar, 1974; Arvind *et al.,* 2016; Narhire *et al.,* 2016; Samaila, 2008). There were 26 cases of sebaceous gland tumors, accounting for 28.26% of all the skin adnexal tumors. The most common sebaceous gland tumor in our series was nevus sebaceous (17 cases) which constituted 65.38% of all sebaceous gland tumors, which is in concordance with most of the other studies (Jayalakshmi and Looi, 1996; Gayathri *et al.,* 2012; Sirsat and Kail, 1964; Yoqoob *et al.,* 2003; Amin *et al.,* 2016). Higher incidence of nevus sebaceous within the sebaceous gland tumors as in our study is in concordance with most of the studies reported previously. There were 4 cases of sebaceous hyperplasia, making an overall incidence of 4.35 % of all the skin adnexal tumors, which is in concordance with Arvind et al(3.33%) and low as compared to Sirsat et al series (14.3%). There in no case reported in Gayathri *et al.,* 2012; Sirsat and Kail, 1964; Vaishnav *et al.,* 1974; Nair, 2008; Radhika *et al.,* 2013 series. There were 2 cases of sebaceous adenoma making an overall incidence of 2.17 % of all the skin adnexal tumors which is comparable to Arvind et al series (5%).There in no case reported in Gayathri *et al.,* 2012; Vaishnav *et al.,* 1974; Nair, 2008; Radhika *et al.,* 2013; Arvind *et al.,* 2016. There were 3 cases of sebaceous carcinoma, making an overall incidence of 3.26% of all the skin adnexal tumors, which is low as compared to Sirsat et al series (22%) but parallels Arvind et al (5.55). Vaishnav et al,Nair PS,Gayathri et aland Radhika et al did not report any case in their study (Gayathri *et al.,* 2012; Sirsat and Kail, 1964; Vaishnav *et al.,* 1974; Nair, 2008; Radhika *et al.,* 2013; Arvind *et al.,* 2016). There were 25 cases of sweat gland tumors in our study, constituting 27.17% of all the skin adnexal tumors. Most common in our series was eccrine spiradenoma (7 cases).The most common benign sweat gland tumors in Sirsat et al, Vaishnav et al,Nair PS,Gayathri et aland Radhika et alseries was nodular hidradenoma. Commonest benign tumor in Nair PSwas syringioma (Gayathri *et al.,* 2012; Sirsat and Kail, 1964; Vaishnav *et al.,* 1974; Nair, 2008; Radhika *et al.,* 2013). There were 5 cases of syringoma accounting for 5.44% of the sweat gland tumors, which is in concordance to arvind et al(3.33%) and marginally higher as compared to Vaishnav et aland Sirsat et al series,which had only one case each in their series (Sirsat and Kail, 1964; Vaishnav *et al.,* 1974; Arvind *et al.,* 2016). There are only few studies from India describing in detail about the appendagealtumors of the skin. We observed that adnexal tumors of skin appear to be relatively uncommon. Histopathological examination is the cornerstone in establishing the diagnosis of adnexal neoplasms.

## REFERENCES

Alsaad, K.O., N.A. Obaidat, D. Ghazarain, 2007. Skin adnexal neoplasms-part 1: An approach to tumors of pilosebaceous unit, *J ClinPathol.,* 60: 129:44

Amin, N., Shah, S., Prajapati, S., Goswami H. 2016. Histomorphological spectrum of skin adnexal tumors at a tertiary care hospital - a retrospective study. *Int J Cur Res Rev,* Feb, 8(4).

Arvind, G.V., Ansari, S.A.H., Sinha, R.K., Jadhav, V.C. 2016. A Clinicopathological Study of Adnexal Tumors of Skin in a Tertiary Care Research Hospital, ISSN: 2249-9571.

Gayathri, S.S., Alavandar, E., Kumar, S.A. 2012. An analysis of skin appendageal tumors in south India. *J Evol Med Den Scs.,* 1(6):907-12

Jayalakshmi, P., Looi, L.M. 1996. Cutaneous adnexal neoplasms in biopsy specimens processed in the Department of Pathology, University of Malaya. *Ann Acad Med Singapore.,* Jul; 25(4):522-5.

Jindal, U., Patel, R. 2012. Study Of Adnexal Tumors Of The Skin: A Three Year Study Of 25 Cases. *The Internet Journal of Pathology*., 13 (3). DOI: 10.5580/2bf5

Kartha, C.C., Shankar, S.K., Bhuyan, U.N. 1980. Benign mixed tumor of skin–a histopathologic study of 7 cases. *Indian J PatholMicrobiol*., 23:1-6.

Nair, P.S. 2008. A clinico-histopathological study of skin appendageal tumors. *Indian J DermatolVenereolLeprol*., 74(5):550.

Narhire, V.V., Swami, S.Y., Baste, B.D., Khadase, S.A., D'costa, G.F. 2016. A Clinicopathological study of skin and adnexal neoplasms at a rural based tertiary teaching hospital. *Asian Pac. J. Health Sci.,* 3 (2):153-162.

Radhika, K., Phaneendra, B.V., Rukmangadha N, Reddy, M.K. 2013. A study of biopsy confirmed skin adnexal tumors: experience at a tertiary care teaching hospital. *J ClinSci Res.,* 2:132-8.

Samaila, M O A, 2008. Adnexal skin tumors in Zaria, Nigeria, *Annals of African Medicine*, 7(1), 6-10

Sharma, A., D.G. Paricharak, J.S. Nigam, S. Rewri, P. B. Soni, A. Omhare et al, 2014. Histopathological Study of Skin Adnexal Tumours- Institutional Study in South India, *Journal of Skin Cancer*.

Sirsat, M.V., Kail, P. 1964. Adnexal tumors of skin. *J Post Grad Med*., 10:137-155.

Vaishnav, V.P., Dharkar, D.D. 1974. Adnexal tumors of skin. *Indian J PatholBacteriol.,* 17:33-8.

Vani, D., Ashwini, N.S., Sandhya, M., Dayananda, T.R., Bharathi, M. 2015. A 5 Year Histopathological Study of Skin Adnexal Tumors at a Tertiary Care Hospital. *IOSR*-JDMS e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 14, Issue 4 Ver. VII, PP 01-05

Yoqoob, N., Ahmad, Z., Muzaffar, S., Gill, M.S., Soomro, I.N., Hasan, S.H. 2003. Spectrum of Cutaneous Appendage Tumors at Aga Khan University Hospital. *J Pak Med Assoc*., Sep; 53 (9): 427-431.

*******