

A Clinicopathological Analysis of Skin Adnexal Tumours : Four Year Retrospective Study

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Abstract

Skin adnexal tumours are uncommon and pose a major diagnostic problem to dermatologists, surgeon and pathologists. The present study aims to study the histopathological profile of skin adnexal tumours in a hospital based population of Jammu region. A four year retrospective analysis of the H& E stained histology slides of cases diagnosed as skin adnexal tumours in the department of pathology GMC Jammu was carried out and their clinical and morphological characteristics were studied. 66 cases of skin adnexal tumours were reported over a 4 year period with benign tumours constituting 93.94% of total cases. Pilomatrixoma was the commonest tumour followed by Naevus Sebaceous of Jadassohn. There were 2 cases each of Sebaceous carcinoma and Malignant mixed adnexal carcinoma. The study confirmed that skin appendageal tumours are rare tumours and histopathology remains the gold standard for arriving at the correct diagnosis.

Key Words

Skin Adnexal Tumours, Sebaceous, Eccrine

Introduction

Adnexal tumors are primary skin tumors 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, apocrine glands and eccrine glands. (1) Skin adnexal tumors are uncommon and pose a major diagnostic problem to dermatologists, surgeons and pathologists. (2) Skin adnexal tumours, many a times, show more than one line of differentiation (hybrid / composite tumours), making precise classification of these neoplasms difficult. These skin adnexal tumours are derived from multipotential undifferentiated cells present within epidermis or its appendageal structures and the histologic features of a tumour are related to the activation of molecular pathways responsible for forming the mature adnexal structures.

Some appendageal tumors have got importance because they behave as marker for internal visceral malignancies such as trichilemmomas in Cowden's disease and sebaceous tumors in Muir-Torre syndrome. (3) Most of the skin adnexal tumors are benign and remain localized to the site, but a malignant counterpart of every skin adnexal tumour has been described. 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 the

diagnosis of malignancy in skin tumors is important for therapeutic and prognostic purposes. (4)

The present study was conducted to determine the frequency, profile and distribution of skin adnexal tumors according to their location and histological type and also to assess benign or malignant nature of the tumors and association of their distribution with patient's age and sex. This single centre study could help us to know the characteristics of adnexal tumors in hospital based population of Jammu region in Jammu & Kashmir State.

Material and Methods

This is a 4 year retrospective analysis of cases diagnosed as skin adnexal tumors on histopathological examination of Haematoxylin & Eosin stained sections in histopathological section of department of pathology, GMC Jammu.

Clinical data, including age at the time of diagnosis, sex and site of the lesion were recorded from the histopathology requisition forms and the histopathology slides were also retrieved from the archives of the histopathology department.

Histopathological diagnosis was mandatory for inclusion in the study. Cases clinically diagnosed as appendageal tumors, but not proven histologically to be adnexal tumors, were excluded from the study. As per these inclusion criteria, total number of cases included in the study were 66.

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Results

In this retrospective study, out of all the cases reported in the dermatopathology and histopathology section of department of pathology (>10,000), only 66 cases were reported as skin adnexal tumors. This supports the observations of other authors that the incidence of skin adnexal tumors is very low as compared to total burden of surgical specimen received. The age of the patients ranged from 6-85 years with male to female ratio of 1.44:1 (39 males & 27 females) [Table 1]. The highest incidence was observed in the age group 31-40 years (n=16/66; 24.24%) followed by age group 11-20 years (n=13/66; 19.69%) [Table 2]. The head and neck region was the most common site affected (n=51; 77.27%), followed by upper limb and trunk (n=8; 12.12%) & lower limb and abdomen (n=6; 9.09%) [Table 3].

In the head and neck region, 20 cases reported were from scalp, 9 cases were from upper and lower eyelids, 17 cases were from other sites on face and the neck region reported only 5 cases of skin adnexal tumours. In the upper limb and trunk; 3 cases were reported from arm; 1 each from forearm, elbow, axilla, ring finger and trunk. In the lower limb 3 cases were reported from thigh, 2 from lower leg and 1 from foot.

In present study benign adnexal tumours constituted the major group comprising of 62 cases (93.94%) and the malignant adnexal tumours constituted 4 cases (6.06%) only [Table 4]. In our study the tumours with hair follicle differentiation constituted the largest group comprising

of 25/66 cases (37.87%); followed by tumours with sebaceous differentiation 19/66 cases (28.78%); tumours with eccrine differentiation 14/66 cases (21.21%); tumours with apocrine differentiation 6/66 cases (9.09%) and mixed adnexal tumours 2/66 (3.03%). The pilomatrixoma [Fig.4] was the commonest tumour in tumours with adnexal tumours with hair follicle differentiation and Naevus Sebaceous [Fig.3] was the commonest tumour in adnexal tumours with sebaceous differentiation.

The hair follicle tumours constituted 13 cases of Pilomatrixoma, 7 cases of Proliferating Trichilemmal cyst, 3 cases of Trichoepithelioma, 1 case each of Trichofolliculoma and Tricholemmoma.

The Sebaceous gland tumours in our study included 10 cases of Naevus Sebaceous of Jadassohn, 5 cases of Sebaceous Hyperplasia, 2 cases of Sebaceous Epithelioma and 2 cases of Sebaceous Carcinoma. The sweat gland tumours included 5 cases of Eccrine Spiradenoma, 3 cases of Eccrine Poroma, 3 cases of Eccrine Syringoma, 2 cases of Eccrine Hidrocystoma [Fig.2], 1 case of Eccrine Cystadenoma; and 3 cases each of Chondroid Syringoma and Syringocystadenoma Papilliferum [Fig.1]. 2 cases were of Malignant Mixed Adnexal Carcinoma.

Discussion

Cutaneous adnexal tumours are derived from pluripotent cells that have ability to differentiate toward any of the lineage. Owing to their common origin many tumours may contain elements of two or more appendages

Table 1. Sex Distribution of Skin Adnexal Tumours in Our Study

S No	Sex	No of cases	Percentage of cases
1	Male	39	59.09%
2	Female	27	40.90%

Table 2. Age Distribution of Skin Adnexal Tumours in Our Study

S No	Age group (In years)	No of cases	Percentage
1	0-10	1	1.52%
2	11-20	13	19.69%
3	21-30	11	16.66%
4	31-40	16	24.24%
5	41-50	10	15.15%
6	51-60	8	12.12%
7	61-70	5	7.57%
8	71-80	1	1.52%
9	81-90	1	1.52%

Table 3. Distribution of Tumour According to Location

S No	Site of adnexal tumour	Number of cases	Percentage of cases
1	Head and Neck	51	77.27%
2	Trunk and Upper limb	8	12.12%
3	Abdomen and Lower limb	6	9.09%

Table 4. Classification of Skin Adnexal Tumours In Our Study

S No	Behaviour of tumour	No of cases	Percentage
<u>1</u>	<u>Benign</u>	<u>62</u>	<u>93.94%</u>
	a. Tumours with Hair Follicle Differentiation	25	
	b. Tumours with Sebaceous Differentiation	17	
	c. Tumours with Eccrine Differentiation	14	
	d. Tumours with Apocrine Differentiation	6	
<u>2</u>	<u>Malignant</u>	<u>4</u>	<u>6.06%</u>
	a. Sebaceous Carcinoma	2	
	b. Malignant Mixed Adnexal Carcinoma	2	

Fig 1. Syringocystadenoma Papilliferum Cystic Invaginations In The Dermis , With Many Papillary Projections Lined By Double Layer Of Epithelial Cells [Luminal Columnar And Outer Cuboidal]The Stroma Is Infiltrated By Dense Mononuclear Infiltrate Rich In Plasma Cells.

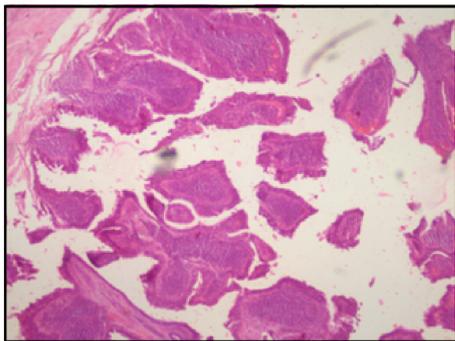


Fig 3. Naevus Sebaceous: Hamartoma composed of numerous hyperplastic sebaceous glands ,heterotopic apocrine glands ,primordial hair follicles

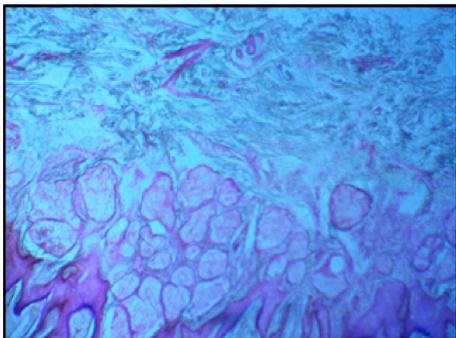


Fig 2. Eccrine Hidrocystoma :Cystic dilatation of intradermal sweat gland Lined by double layered cuboidal epithelium ,lacking decapitation .Note absence of papillary projections in the cavity

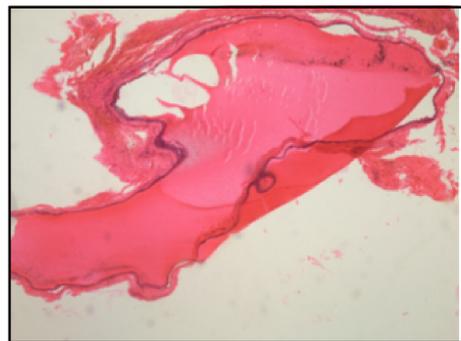
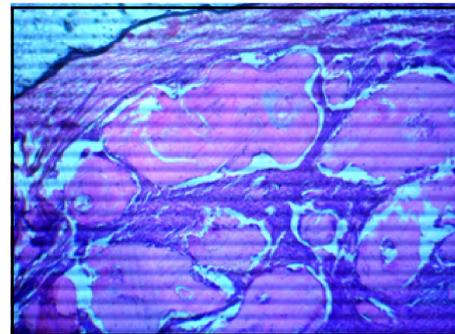


Fig 4. Pilomatrixoma ,Well circumscribed tumour with islands of basaloid cells and shadow cells,most of the tumour is composed of eosinophilic keratin debris with focal areas of calcification



in varying degree of maturation . Many studies have described skin adnexal tumours with combined characteristics . As observed in many previous studies, (5-10) in the present study also , the incidence of skin adnexal tumours was very low as compared to the total

burden of surgical specimen received. However, the true clinical incidence of adnexal tumours is believed to be higher than reported because many adnexal tumours are a symptomatic benign lesions that are usually not cosmetic disfiguring or irritating for the patient and hence not

reported to clinics. The long duration of the tumour and the presentation as asymptomatic papule or nodule indicate the benign nature of majority of skin adnexal tumours. (5) Although rare, skin adnexal tumours have been recognised from as early as the later part of 19th century. (6)

The skin adnexal tumors have a wide range of age distribution. In our study maximum number of cases have been reported in the age group of 31-40 yrs. This is in conformity with earlier studies by Radhika *et al* and Rayati *et al*; whereas studies by Ankit *et al* and Vani *et al* report 51-60 years as commonest age of presentation. (6,9,10,11)

Some tumours are present at an early age but become noticeable later when they enlarge in size e.g. Nevus Sebaceous of Jadassohn are present at birth but are hardly discernible. Progressive thickening and growth occurs on reaching adolescence and this is the time when patients seek medical attention. Malignant adnexal tumours have been reported in advanced age and are rare.

Male : Female ratio was reported to be 1.44:1 in our study. Earlier studies report this ratio as 51:49(Rayati *et al*); 1:1.68 (Vani *et al*); 10:23 (Nair *et al*); 1.8:1(C Pantola *et al*); 1.07:1 (Ankit *et al*). Female / male preponderance was reported in almost all types of adnexal tumours (6,7,8,12).

The most common anatomical site of skin adnexal tumours reported in our study is head and neck region and this is in conformity with and well documented in earlier studies from other countries and other states of India too.

The rich distribution of apocrine and eccrine sweat glands and pilosebaceous apparatus in head and neck region is the reason why majority of adnexal tumours are reported from head and neck region. (5-12)

All the studies report that the incidence of benign adnexal tumours is more as compared to the malignant ones. The incidence of benign and malignant tumours in our study is 62:4. Which is in tandem with studies of Radhika *et al*; Ankit *et al*; Samaila *et al*; Vani *et al* and Rayati *et al* who reported 77.14%, 80.36%, 88.5%, 74.50%, 93.8% benign and 29.63%, 19.64%, 11.5%, 25.49%, 6.2% malignant lesions respectively. No tumor with malignant change was reported in a three year clinicopathological study by Nair P S *et al*. (6-12)

Pilomatrixoma (13/62;20.96%) is the most frequently encountered benign adnexal tumour in our study followed by Nevus Sebaceous of Jadassohn (11/62;16.66%). This is in accordance with studies by Rayati *et al*. (8)

The most common malignant adnexal tumor reported in our study was Sebaceous Carcinoma. The mean age of diagnosis is 72 years most commonly seen in head and neck area. The low degree of suspicion in malignant adnexal tumours may become a reason for their delayed

diagnosis.

Our study confirms the fact that skin adnexal tumours are rare and Histopathological studies are the gold standard to establish the diagnosis of adnexal tumours inspite of expanding use and dependability on special tests like immunohistochemistry. In today's time also it is an intimidating task for pathologists to make a complete diagnosis and categorise the adnexal tumours; as they are still very rare.

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