Research Article

Histopathological study of 26 rare skin adnexal tumours over 5 years – a diagnostic dilemma!

Sadaf Alam, Misbah Lateefa, Raghumani Mohanty

Department of Pathology, Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha, India.
Correspondence to: Sadaf Alam, E-mail: sadaf_ch@yahoo.com

Received January 31, 2016. Accepted March 11, 2016

Abstract

Background: Skin adnexal tumors (SATs) are rare in Indian subcontinent and hence pose difficulty in diagnosis as they may histopathologically look like more common skin malignancies in this region. Several studies on SATs have been carried out in Western countries but very few in this region.

Objective: To correlate SATs with age, sex, and location and determining its incidence in the Department of Pathology at Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha and to address dilemmas in diagnosing them.

Materials and Methods: A total of 26 cases were included in this study from January 2010 to June 2015 with respect to incidence of adnexal tumors, age, and sex distribution. All slides were stained with hematoxylin and eosin and then findings were corroborated with special stains such as PAS and reticulin wherever required.

Result: Of all, 92.31% (24/26) were benign and 7.69% (2/26) were malignant adnexal tumors. The sebaceous gland tumors constituted the largest group (42.31% 11/26) cases followed by the sweat gland tumor (34.62%, 9/26) cases and hair follicle tumor (23.10%, 6/26) cases. Overall male:female ratio was 1.16:1. The most common age group was 40–49 years and the commonly affected body part was head and neck region (61.53%, 16/26) followed by trunk (15.38%, 4/26). Eccrine poroma, sebaceous hyperplasia, and pilomatricoma were the most common benign tumors and two sebaceous carcinoma were the only two malignant tumors seen.

Conclusion: The incidence of benign skin adnexal tumors was more as compared to the malignant tumors. Malignant tumors were seen in older age.

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.[1] These tumors are derived from multipotential undifferentiated cells present within the epidermis or its appendageal structures and the histologic features of a tumor are related to the activation of molecular pathways responsible for forming the mature adnexal structure.[1] SATs are rare in Indian subcontinent and hence pose difficulty in diagnosis as they may histopathologically look like more common skin malignancies in this region. Several studies on SATs have been carried out in Western countries but very few in this region.

Most of the benign SATs are present as asymptomatic papules or nodules and are often difficult to diagnose clinically however anatomic location, number, and distribution of lesions provide important clue and no change required.[2] However, histopathology and immunohistochemistry may help in confirmation of the diagnosis.[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).

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2016.31012016412	

Materials and Methods

This study includes the cases from January 2010 to June 2015. A total of 26 cases were included in this study, which

were reported by the histopathology sections of the Department of Pathology, Hi-Tech Medical College and Hospital Bhubaneswar, Odisha. The clinicopathological data were taken from the record office for the given period. The histopathological examination was carried out on formalin-fixed tissues and paraffin embedded blocks were made. Hematoxylin and eosin stained sections were examined and few special stains such as PAS and reticulin were performed wherever required. However in our laboratory setup, histochemical staining for enzymes such as alkaline phosphatase, phosphorylase, succinic dehydrogenase, indoxyl esterase, and acid phosphatase was not available; they were not performed.

Result

In this study, 92.31% (24/26) were benign and 7.69% (2/26) were malignant adnexal tumors. The sebaceous gland tumors constituted the largest group (42.31% 11/26) cases followed by the sweat gland tumor (34.62%, 9/26) cases and hair follicle tumor (23.10%, 6/26) cases [Tables 1–3].

The male: female ratio was 1.16:1. Tumors were observed in all age groups ranging from 11 to 85 years. However, the highest incidence was observed in the age group of 40–49 years (11/26). The most commonly affected body part was head and neck regions (61.53%, 16/26) followed by trunk (15.38%, 4/26). Eccrine poroma, sebaceous hyperplasia, and pilomatrixoma were the most common benign tumors and two sebaceous carcinoma were the only two malignant tumors seen.

The sweat gland tumors are comprised of chondroid syringoma, eccrine poroma, nodular hidradenoma, and syringocystadenoma papilliferum [Figure 1]. Sebaceous gland tumors are comprised of sebaceous adenoma and sebaceous carcinoma. The hair follicle tumors are comprised of trichofolliculoma (sebaceous), pilomatricoma, and dilated pore of Winer (Figures 2-5). Among the malignant tumors, sebaceous carcinoma was the only malignant tumor observed and constituted 7.69% (2/26).

Discussion

Incidence of benign tumors was more as compared to malignant cases. Sebaceous gland tumors were most common. Head and neck were the most common sites. Males and females were almost equally affected and most commonly between 40 and 49 years of age. Radhika et al.,[4] Reddy et al.[5] and Samaila[6] who reported 77.14%, 69.41%, and 88.5% benign and 29.63%, 30.59%, and 11.5% malignant lesions respectively, these were similar results to our study as in this study 92.31% (24/26) tumors were benign and 7.69% (2/26) were malignant. Nair[7] observed that sweat gland tumors are

Table 1: Adnexal tumors according to the type of differentiation

Type of differentiation	No. of cases	%
Sebaceous gland tumors	11	42.31
Sweat gland tumors	9	34.62
Hair follicle tumors	6	23.10
Total	**26**	**100**

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

Site of tumor	Male	Female	Total	%
Head and Neck	9	7	16	61.53
Trunk	2	2	4	15.38
Other areas	3	3	6	22.09
Total	**14**	**12**	**26**	**100**

Table 3: Age-wise distribution of tumors

Tumors	Age group (in years)							
	1–9	10–19	20–29	30–39	40–49	50–59	60–69	>70
Sebaceous gland tumors								
Sebaceous hyperplasia					3	1		
Sebaceous adenoma				2	2			
Nevus sebaceous		1						
Sebaceous carcinoma							1	1
Sweat gland tumors								
Chondroid syringoma					1			
Eccrine poroma				1	1	1		
Nodular hidradenoma					1	1		
Syringocystadenoma papilliferum			1					
Eccrine Syringofibroadenoma				1	1			
Hair follicle tumors								
Pilomatricoma				1	1	1		
Trichofolliculoma (Sebaceous)			1		1			
Dilated port of Winer				1				

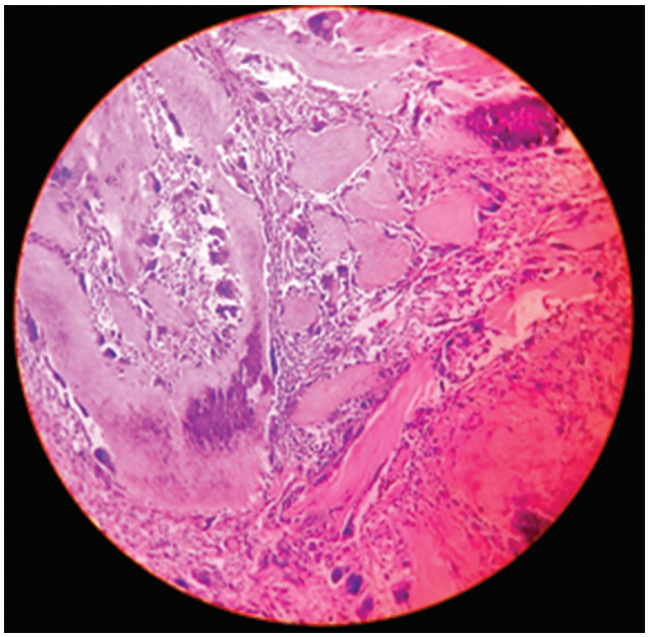

Figure 1: Calcifying pilomatrixoma.

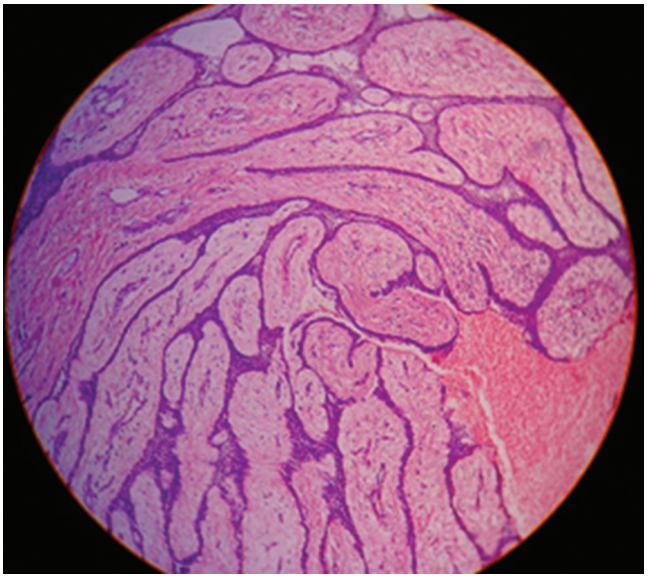

Figure 2: Eccrine syringofibroadenoma.

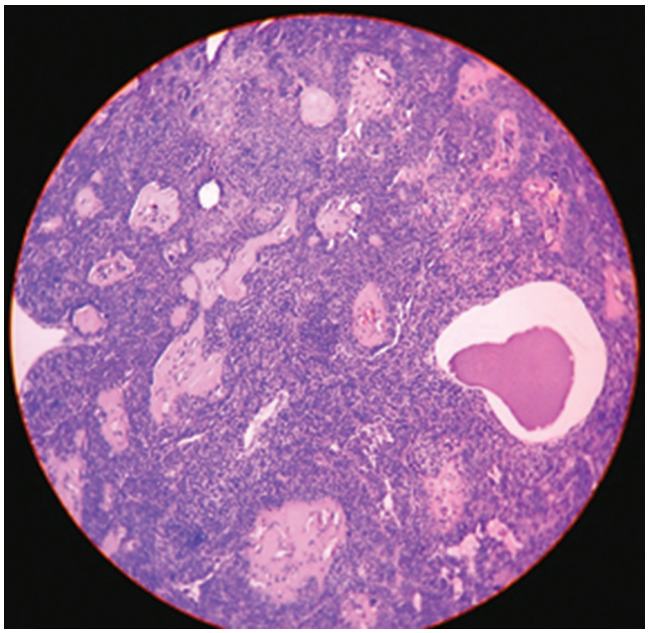

Figure 3: Nodular hidradenoma.

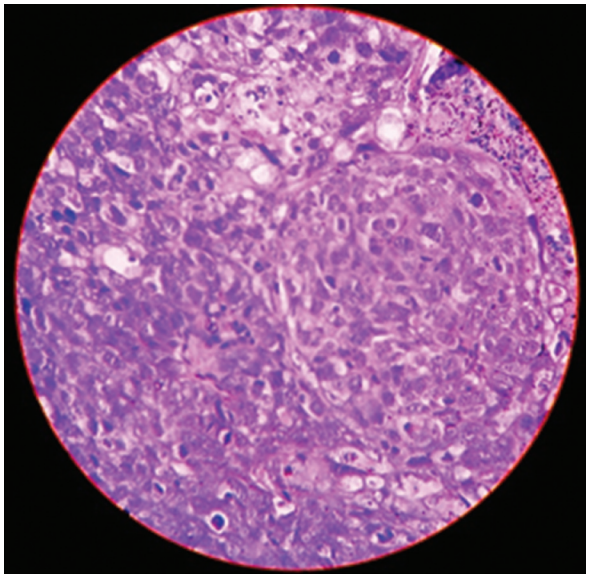

Figure 4: Sebaceous carcinoma.

the most common followed by hair follicle tumors. However, this study showed that the most common tumors were sebaceous, followed by sweat gland tumors. Radhika et al.[4] and Samaila[6] observed that sweat gland tumors are the most common SATs followed by sebaceous gland tumors which are then 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. Radhika et al. also observed that majority of the patients are third decade and females outnumbered males.[4] However, this study showed male: female ratio of 1.16:1. Saha et al.[8] observed the mean age of onset of SATs was 24.15 ± 8.44. Nair[7] observed that the most common age group of presentation was 11–20 years, however in this study, the common age group of presentation was 40–49 years. Samalia[6] observed that 46% lesions were located in head and neck regions which were also seen in our study. Song et al. observed that pilomatricoma was the most common benign tumor followed by dermoid cyst followed by steatocystoma multiplex, syringoma, and trichilemmal cyst.[9] Radhika et al. observed that the most common benign tumor is nodular hidradenoma

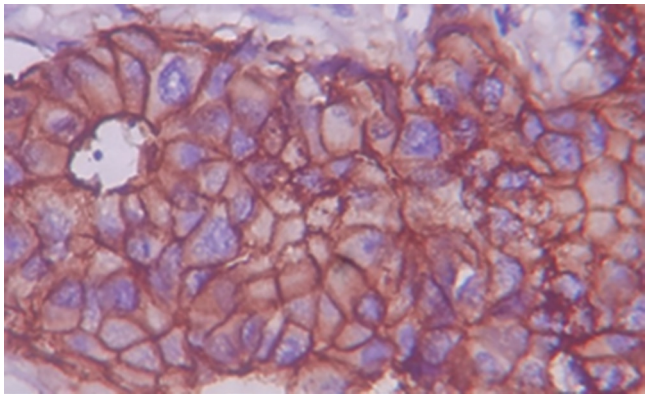

Figure 5: Sebaceous carcinoma, IHC: EMA +ve.

followed by sebaceous naevus.[4] In this study, most common tumors were eccrine poroma, sebaceous hyperplasia, and pilomatrixoma.

Strength of this study was that special stains and IHC were carried out to confirm the diagnosis whenever required. Limitations are that in spite of studying cases for 5 years we could still only get 26 tumors of which only two were malignant.

Conclusion

In Indian population, an 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 more than 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 regions constitute the most common sites. Majority of the tumors can be classified into different subgroups on the basis of light microscopy alone. Skin adnexal tumors showing sebaceous gland differentiation are seen more frequently. In our institutional study, eccrine poroma is the most common tumor with sweat gland differentiation, whereas pilomatrixoma is the most common type of hair follicle tumor. Among the tumors with sebaceous differentiation, sebaceous hyperplasia and sebaceous carcinoma (meibomian carcinoma) are the most common.

References

1. Ahmed TSS, Priore JD, Seykora JT. Tumors of epidermal appendages. In: *Lever's Histopathology of the Skin*, 9th edn, Elder DE, Elenitsas R, Johnson BL, Murphy GF (Eds.). Philadelphia, PA: Lippincott Williams & Wilkins, 2005. pp. 867–8.
2. Stantaylor R, Perone JB, Kaddu S, Kerl H. Appendage tumors and hamartomas of the skin. In: *Fitzpatrick's Dermatology in General Medicine*, Wolff K, Goldsmith L, Katz S, Gilchrest BA, Paller AS, Leffell DJ (Eds.). New York, NY: McGraw Hill, 2008. pp. 1068–1087.
3. Penneys NS. Immunohistochemistry of adnexal neoplasms. J Cutan Pathol 1984;11(5):357–64.
4. Radhika K, Phaneendra BV, Rukmangadha N, Reddy MK. A study of biopsy confirmed skin adnexal tumors: experience at a tertiary care teaching hospital. J Clin Sci Res 2013;2:132–8.
5. Reddy MK, Veliath AJ, Nagarajan S, Aurora AL. A clinicopathological study of adnexal tumours of skin. Indian J Med Res 1982;75(6):882–9.
6. Samaila MOA. Adnexal skin tumors in Zaria, Nigeria. Ann Afr Med 2008;7(1):6–10.
7. Nair PS. A clinico-histopathological study of skin append- ageal tumors. Indian J Dermatol Venereol Leprol 2008;74:550.
8. Saha A, Das NK, Gharami RC, Chowdhury SN, Datta PK. A clinicohistopathological study of appendageal skin tumors, affecting head and neck region in patients attending the dermatology opd of a tertiary care centre in eastern India. Indian J Dermatol 2011;56:33–6.
9. Song KY, Yoon DH, Ham EK, Lee YS. Clinicopathological study on the skin appendage tumors. Korean J Pathol 1989;23:111–21.

How to cite this article: Alam S, Lateefa M, Mohanty R. Histopathological study of 26 rare skin adnexal tumours over 5 years – a diagnostic dilemma!. Int J Med Sci Public Health 2016;5:1995-1998

Source of Support: Nil, **Conflict of Interest:** None declared.