Original Article

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A Clinico-histopathological Study of Appendageal Skin Tumours Over A Period of Four Years in A Tertiary Care Center

Dermatology Section

PRAVEEN KUMAR SHANMUGAM REDDY, ARAKALI LAKSHMINARAYANA SHYAM PRASAD, THARAYIL KUNNETH SUMATHY KANAKAPURA NANJUNDASWAMY SHIVASWAMY, NETHRAVATHI AJJANAHALLI RANGAIAH

ABSTRACT

Introduction: Appendageal tumours arise from pilo sebaceous apparatus, eccrine and apocrine sweat glands. A great majority of these tumours are benign in nature. A clinico-histopathological co-relation is essential for a final diagnosis.

Aim: To document the clinical and histopathological features in confirmed cases of appendageal tumours.

Materials and Methods: All patients with a confirmed histopathological diagnosis of appendageal tumours over a period of 4 years (2009-2012) were included. The clinical and histological findings were correlated.

Results: 25 cases of appendageal tumours were detected on histopathology. They were found in patients in the age group of 6 -65yrs,with a M:F ratio of 1.7:1. 24 tumours were benign and 1 was premalignant. The tumours were further classified into eccrine – 8 cases (32%), Sebaceous-11 (44%), apocrine – 1 (4%) and of hair follicle – 5 (20%) origin. The most common Eccrine tumour was syringoma – 4 / 8 (50%), which presented with skin coloured papules over the infraorbital area. Eccrine hidrocystoma presented with a similar morphology along with a few vesicles, with summer exacerbation. The most common sebaceous tumour was sebaceous hyperplasia–7/ 11 (63.6%),and hair follicle tumour was pilomatricoma – 4/5 (80%), of which 3 presented as firm to hard skin coloured nodules and one as a fleshy nodule over the arm and Dimple-sign was elicited in all of the tumours.

Conclusion: Appendageal tumours are relatively rare tumours, often difficult to diagnose clinically. Confirmation of diagnosis is usually by histopathology.

Keywords: Apocrine, Eccrine, Sebaceous

INTRODUCTION

Appendageal skin tumours are derived from undifferentiated pleuripotent stem cells and they can differentiate into tumours of hair follicle, sebaceous, eccrine and apocrine sweat glands [1,2]. The morphology of these tumours is variable. A clinical diagnosis may be difficult, although most of these tumours are benign. Multiple lesions are a clue to the benign nature of the condition. A knowledge of anatomical location and distribution of adnexal structures should be considered before charting out a differential diagnosis. Sometimes appendageal tumors serve as markers of underlying genetic syndromes. In most of the cases the diagnosis is based on a good clinic-histopathological correlation.

MATERIALS AND METHODS

This study was a observational, descriptive study conducted in the department of Dermatology, M.S. Ramaiah Medical College. Patients with a confirmed histopathological diagnosis of appendageal tumours over a period of 4 years (2009-2012) were included. Biopsy with histopathological examination of tumours were done. The data was collected from the outpatient, inpatient and the histopathological records. All clinically suspected cases of appendageal tumours with a confirmed histopathology were included in the study. The patients without a confirmed histopathology and those not willing to give informed consent were excluded from the study.

The clinical and histological findings in these cases were correlated and the classification of tumours based on their origin into hair follicle, sebaceous, apocrine, eccrine and apo-eccrine was done. An attempt was made to include the immunohistochemistry details supporting the histopathological diagnosis, in the clinically suspected appendageal tumours.

RESULTS

In our study, the incidence of AT was 0.073% (25 cases out of 34,437 cases attended the dermatology OPD of our hospital over a period of 4 years from 2009 to 2012). Of 25 cases documented, 24 tumours were benign and 1 was premalignant. Age group 6 -65 yrs were analysed. The age group in which maximum cases were seen between 11-20 yrs with 8 cases (32%), M:F ratio of 1.7:1. The tumours were further classified into eccrine – 8 cases (32%), sebaceous-11 (44%), apocrine – 1 (4%) and of hair follicle – 5 (20%) origin. The most common

eccrine tumour was syringoma – 4 / 8 (50%), which presented with skin coloured papules over the infraorbital area. Eccrine hidrocystoma presented with a similar morphology along with a few vesicles, with summer exacerbation. Amongst the tumours of sebaceous origin sebaceous adenoma: 7 /11 cases (63.6%) was the commonest, and among the hair follicle differentiation the most common tumour was pilomatricoma – 4/5 (80%), of which 3 presented as firm to hard skin coloured nodules and one as a fleshy nodule over the arm. Dimple-sign was elicited in all the tumours. One case of extra mammary Paget's disease was reported.

[Table/Fig-1] shows lesions of eccrine hidrocystoma wherein the patient presented with multiple papules and vesicles over the lower eyelids, with a history of summer exacerbation. Clear fluid oozed out of the lesions on pricking with a sterile needle. The histopathological examination [Table/Fig-2] of the lesion shows a well-demarcated cyst in the superficial and mid-dermis. The wall of the cyst was lined by two layers of small cuboidal cells. [Table/Fig-3] shows a pink fleshy swelling of 3 x 2 cm over flexor aspect of forearm. On palpation hard indurated areas were identified. A differential diagnosis of calcinosis cutis, pilomatricoma and dermatofibroma was considered. Histopathological examination showed proliferating basaloid cells and the eosinophillic shadow cells in the dermis [Table/Fig-4] , confirming a diagnosis of Pilomatricoma.

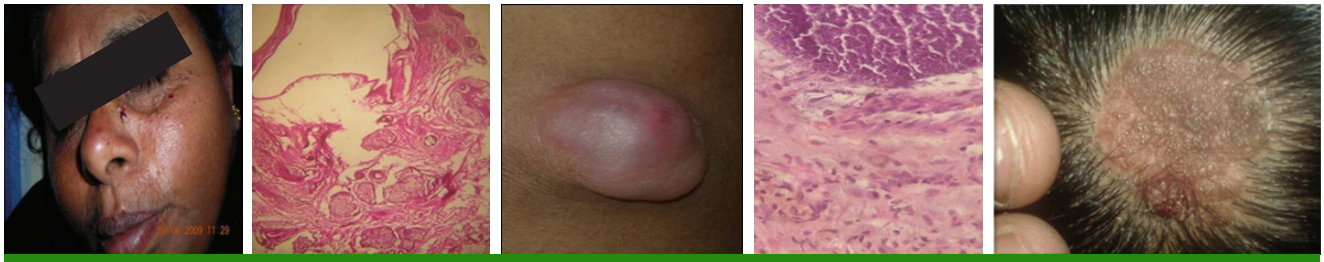
[Table/Fig-5] shows the parietal area of scalp with a verrucous plaque, in a 14 year old boy. There was a history of a bald patch since birth, which showed surface changes since 4 years. The histopathological examination [Table/Fig-6] showed hyperkeratosis and acanthosis of the epidermis, dermis showed hypertrophic prominent sebaceous gland hyperplasia, with small hair follicle. This was a case of nevus sebaceous of Jadassohn.

[Table/Fig-7] shows, a lichenified plaque with an area of depigmentation over left side of groin, since 2 months. This lesion was a recurrence following surgical excision, 6 years back. A clinical differential diagnosis of lichen sclerosis et atrophicus, lichen simplex chronicus, Bowen's disease and squamous cell carcinoma was made. Histopathological examination revealed hyperkeratosis, acanthosis and Paget's cells in the epidermis [Table/Fig-8,9]. Immunohistochemistry for CK7, CEA and GCDFP15 was positive. Chest X-ray, MRI of abdomen and pelvis and other routine investigations were within normal limits. A final diagnosis of recurrence of EMPD was made.

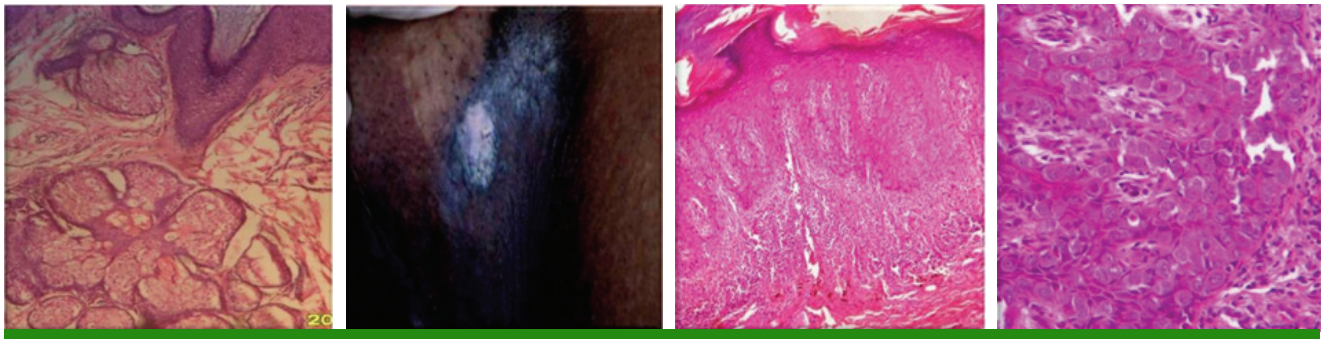
DISCUSSION

Appendageal tumours (AT) arise from pleuripotent stem cells which may differentiate into eccrine, apocrine, sebaceous or hair follicle structures [3]. AT can differentiate into more than one cell line in the same tumour, this is attributed to their origin from pleuripotent cell lines [4-6] group of entities may coexist and form a syndrome. In comparison the incidence of appendageal tumour in a study by Saha A et al., [7] was 0.08%. There was a female preponderance of cases in a study by Nair et al., [8].

In this study, the incidence of AT was 0.073% and there



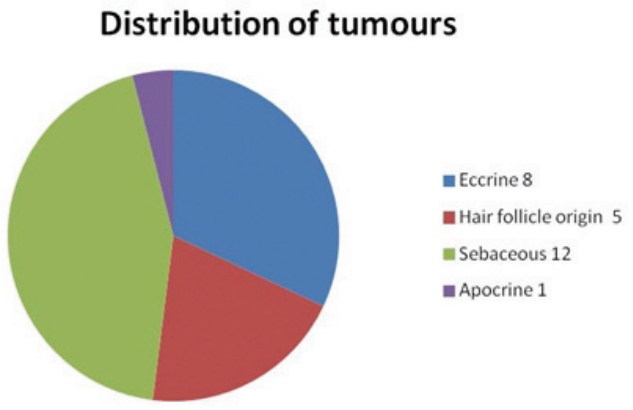
[Table/Fig-1]: Multiple papules and vesicles over lower eyelid. **[Table/Fig-2]:** well-demarcated cyst in the dermis lined by two layers of small cuboidal cells(H/E stain),(45X). **[Table/Fig-3]:** Fleshy pink nodule over flexor aspect of left forearm. **[Table/Fig-4]:** Dermis showing basaloid cells with eosinophillic shadow cells at the lower part. (H/E stain), ((45X). **[Table/Fig-5]:** Verrucous plaque over parietal area of the scalp.



[Table/Fig-6]: Dermis showing hyperplastic sebaceous glands(H/E stain),(45X). **[Table/Fig-7]:** Lichenified plaque over left side of groin with an area of depigmentation. **[Table/Fig-8]:** Epidermis shows hyperkeratosis, acanthosis with multiple Pagets cells(H/E stain),(10X)
[Table/Fig-9]: Close-up view of Paget's cells(H/E stain),(45X).

was a male preponderance, with M: F ratio being 1.7:1. The commonest age group in which these tumours were found was 11-20 yrs age group. The most common appendageal tumours in our study [Table/Fig-10,11] were of sebaceous differentiation with 11/25 cases (44%). Though the most common tumour reported in our study was sebaceous adenomas, there was no associations with any other cutaneous or visceral malignancy or syndromes.

The other tumours were eccrine 8/25 cases (32%), hair follicular origin 5/25(20%) and apocrine differentiation with 1/25 cases(4%). In contrast Saha et al., [7] and Nair et al., [8], reported the most common tumour to be syringoma (eccrine origin).The most common tumour type of eccrine origin was syringoma [Table/Fig-12], Pilomatricoma was the most common tumour of hair follicle origin 4/5(80%) of cases. The most common tumour of sebaceous origin was sebaceous adenoma 7/11 (63.64%) of cases.



[Table/Fig-10]: Pie-chart showing distribution of tumours.

Appendage tumours	Total number	Percentage (%)
Eccrine	8	32
Hair follicle origin	5	20
Sebaceous	11	44
Apocrine	1	4
Total	25	100

[Table/Fig-11]: Tumour groups with frequency (n=25).

Benign tumours most commonly presented as multiple lesions [9,10] which are usually papules.

In this study, multiple papules were reported in tumours like Syringoma (8-10) [Table/Fig-12] and Eccrine hidrocystoma (6-8). The multiple lesions indicate the benign nature of these entities.

Vesicles were reported along with papules in eccrine hidrocystoma with summer exacerbations, and this finding should be kept in mind for all syringoma like lesions.

Pilomatricoma usually presents on the face. We herein report a case of pilomatricoma which presented over the arm as a pink fleshy nodule, hard in consistency and the diagnosis was evident only with histopathological examination. Dimple sign/ Fitzpatrick sign is usually elicited in dermatofibroma. To our surprise, in all cases of pilomatricoma reported in our study, this sign was elicited.

Extramammary Paget's disease is a tumour of apocrine origin, which is further classified into primary or secondary. In our case, there was no evidence of any associated underlying malignancies. Immunohistochemistry was done in only this case. GCDFP 15, CEA, CK 17 were positive. CK 17 is a marker of primary Paget's disease. Gross cystic disease fluid protein marker positivity indicated the apocrine origin of this entity [11]. This case is reported to highlight the rarity in presentation and the recurrence of lesions following surgical excision. The other modalities of treatment other than surgical excision include radiotherapy, topical chemotherapy with 5 flourouracil and cisplatin. For invasive and metastatic disease systemic chemotherapy with a Combination of 5-FU, Cisplatin, mitomycin C, vincristine , Epirubicin and docetaxel [9] is tried.

A thorough search was made to find out any associations with syndromes since most common tumour reported was sebaceous adenomas, however there was no association with any syndromes (like Muir Torre syndrome).

Appendageal tumours	Tumour types	Percentage in individual groups (%)	Clinical type of lesions	Site of lesions	Number of lesions
Eccrine (8/25)	Syringoma (4/8) Eccrine hidrocystoma (3/8) Eccrine spiradenoma (1/8)	50% 37.5% 12.5%	Papules Papules Vesicles Nodule	Eyelids Eyelids Lower eyelids scalp	8-10 6-8 4-5 1
Hair follicle origin (5/25)	Pilomatricoma (4/5) Trichoepithelioma (1/5)	 80% 20%	Nodule Nodule Papules	Arm Face Perinasal	1 2-3 5-8
Sebaceous (11/25)	-Sebaceous adenoma (7/11) -Nevus sebaceous of Jadasson (4/11)	63.64% 36.36%	Papules Plaque with nodule	Face Scalp	3-5 1-4
Apocrine (1/25)	-Extra mammary Paget's disease (1/1)	100%	Plaque	Genital	1-2

[Table/Fig-12]: Tumour types with frequency and clinical features of lesions.

CONCLUSION

There is a paucity of literature on studies including appendageal tumours and this study highlights the various appendageal tumours which were reported over a period of 4 years in a tertiary care center. The incidence in our study was 0.073%, which highlights the rarity of these tumours. The benign tumours which were encountered were usually multiple and the most common morphological presentation was papules and nodules. One important finding of this study was that many cases of eccrine hidrocystoma were reported in lesions where syringoma was suspected. These presented with a unique morphology of vesicles with papules and there was a history of summer exacerbation.

The dimple sign which is usually seen in dermatofibroma, was elicited in all cases of pilomatricoma. A rare case of extra mammary Pagets disease is reported in which patient had recurrence of lesions following surgical excision and there was no association with any internal malignancy. Though multiple sebaceous adenomas were identified, there was no associated cutaneous or systemic carcinomas. The small number of cases reported can be attributed to the rarity of this entity and this is a limitation of our study. A good clinico-histopathological correlation is vital to arrive at a final diagnosis of these entities.

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AUTHOR(S):

1. Dr. Praveen Kumar Shanmugam Reddy
2. Dr. Arakali Lakshminarayana Shyam Prasad
3. Dr. Tharayil Kunneth Sumathy
4. Dr. Kanakapura Nanjundaswamy Shivaswamy
5. Dr. Nethravathi Ajjanahalli Rangaiah

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Skin and STD, M S Ramaiah Medical College and Hospital, Bangalore, India.
2. Professor, Department of Skin and STD, M S Ramaiah Medical College and Hospital, Bangalore, India.
3. Senior Professor and Head, Department of Skin and STD, M S Ramaiah Medical College and Hospital, Bangalore, India.
4. Associate Professor, Department of Skin and STD M S Ramaiah Medical College and Hospital, Bangalore, India.
5. Registrar, Cutis Academy of Cutaneous Scienes, Vijayanagar, Bangalore, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Praveen Kumar Shanmugam Reddy,
189, T2, 3rd Main, 2nd Cross, 1st Block, Koramangala, Bangalore-560034, India.
E-mail: drpraveen.1982@gmail.com

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