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Case Series

A clinico-histopathological study of skin appendageal tumours in a tertiary health care centre in western Odisha– A case series

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ABSTRACT

Introduction: Skin appendageal tumours (SATs) are those neoplasms that arise from pilosebaceous, apocrine, or eccrine sweat glands. These are a diverse group of tumours with both benign and malignant counterparts. They can be single, multiple, or have a syndromic association with internal malignancies. Benign adnexal tumours are more common, while malignant adnexal tumours are rare, usually locally aggressive, and have the potential for nodal involvement and distant metastasis with a poor clinical outcome. Therefore, proper diagnosis of SATs is important for therapeutic and prognostic reasons.
Case Report: This study aims to determine the clinico-histopathological correlation in cases of SATs in our hospital. It is a case series conducted over a one-and-a-half year period from January 2021 to July 2022. All clinically suspected cases of SATs were examined, biopsied, and subjected to histopathological examination. Histopathologically confirmed cases of SATs were finally analysed. Among twenty-four thousand two hundred twenty-four new patients attending OPD, 30 suspected cases of ATs underwent histopathological examination. Histopathology was confirmatory in only 12 cases (40%). 10 cases were benign, and two were malignant. Out of 10 benign cases, hidradenoma was noted in 3 (25%), trichoepithelioma in 2 (16%), proliferating pilar tumour, apocrine hidrocystoma, steatocystoma multiplex, hidradenoma papilliferum, and pilomatrixoma were seen in one each. Females (75%) outnumbered males (25%) in our study population.
Conclusions: SATs are infrequent and are not frequently observed in the field of surgical pathology. Histopathology is the gold standard for diagnosis.

1. Introduction

Skin appendageal tumours (SATs) are those neoplasms that arise from pilosebaceous units, apocrine, or eccrine sweat glands. These tumours have both benign and malignant counterparts and some exhibit mixed differentiation.[1] They clinically present as papules, nodules, and tumours. The correct diagnosis has important implications, as they might be markers for syndromes associated with internal malignancies.[2] Malignant skin appendageal tumours are uncommon, aggressive, and bear a poor clinical outcome. Therefore, proper diagnosis of SATs is important for therapeutic and prognostic reasons.

In this study, we have discussed the incidence, clinical features, gross and microscopic features, and the differentiating features between benign and malignant SATs

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of patients who attended our dermatology OPD.

2. Case Report

This is a case series spanning over a period of one and a half years, from January 2021 to July 2022, at Hitech Medical College, Rourkela. Clinico-pathological characteristics of all benign and malignant tumours were studied.

This is a case series spanning over a period of one and a half years, from January 2021 to July 2022, at Hitech Medical College, Rourkela. Clinico-pathological characteristics of all benign and malignant tumours were studied. Out of twenty-four thousand, two hundred twenty-four new patients attended the OPD, of whom 30 (0.123%) were suspected to have appendageal tumors. The clinical diagnosis of all these cases were dermoid cyst, haemangioma, sebaceous cyst, and nevus. The clinical features, age, sex, gross, and histopathological diagnosis are given in [Table 1].

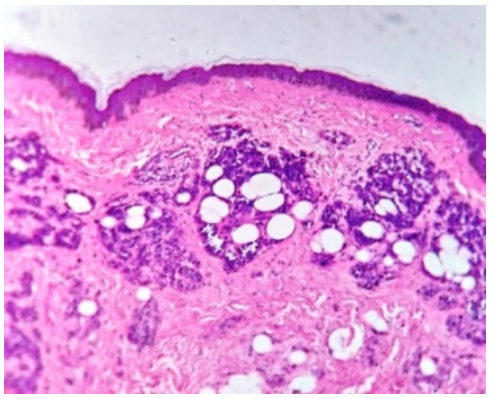

Fig. 1: H & E: Trichoepithelioma: Nests of basaloid cells, horn cysts and mesenchymal bodies (H&E X10)

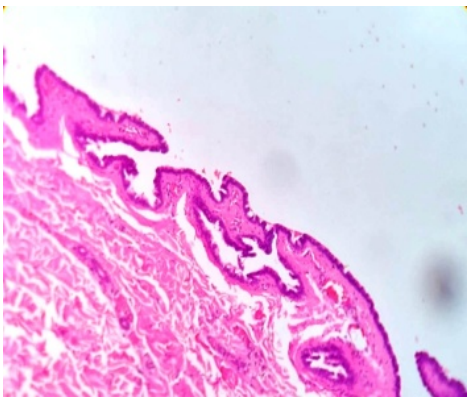

Fig. 2: H & E: Steatocystoma: Dermis showing intricately folded cyst wall lined by layers of epithelial cells with a thick cuticular layer and flattened sebaceous gland (H&E X10)

In 12 patients, a diagnosis of epidermoid cyst was offered; three cases turned out to be xanthomas and three

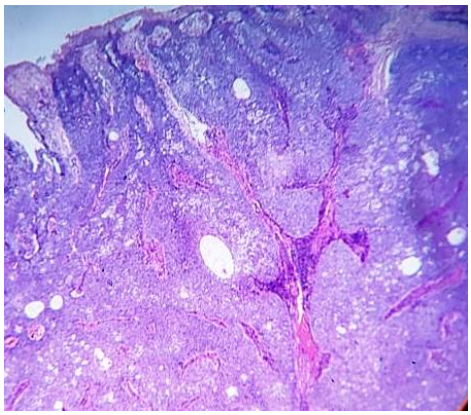

Fig. 3: H & E: Malignant adenexal tumour: Tumour arranged in nests separated by hyalinised stroma around cell nests, loss of peripheral palisading of cells, bimorphic population of cells, cellular pleomorphism, frequent mitosis and foci of necrosis which were seen in our case signify the malignant features. (H&E X10)

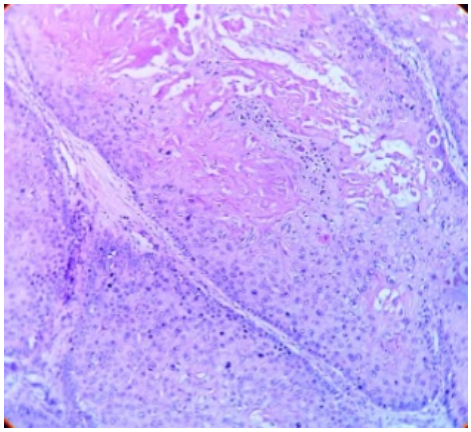

Fig. 4: H & E: Proliferating pilar tumour: multiple lobules of squamous epithelium with typical abrupt trichilemmal keratinisation in the centre (H&E X10)

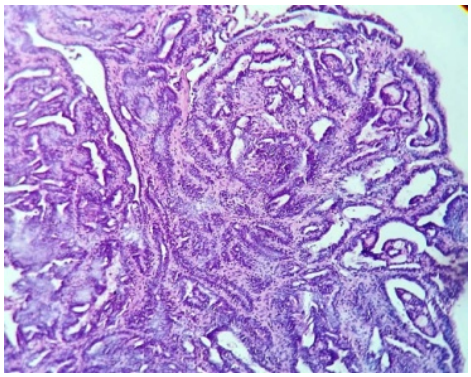

Fig. 5: H & E: Hidradenoma papilliferum: tumour shows numerous papillary projections lined by cylindrical and cuboidal cells with active decapitation secretion. (H & E X 10)

Table 1: The clinical features, age, sex, gross and histopathological diagnosis

S.No.	HP No.	Age	Sex	Site	Size	Clinical DX	HP DX
1	417/21	55	M	Skin	1.7 x 1.2 x 1.0 cm	Skin nodule	Pilomatrixoma
2	587/21	60	F	Scalp	4.5 x 4.0 x 4.0 cm	Dermoid cyst	Proliferating pilar tumour
3	638/21	29	F	Scalp	2.0 x 1.0 x1.0 cm	Dermoid cyst	Hidradenoma
4	102-21	12	F	Scalp	2.0 x 1.0 x 1.0 cm	Dermoid cyst	Trichoepithelioma
5	113/21	53	F	scalp	3.0 x 2.5 x 1.5cm	Naevus	Malignant adnexal tumor of hair follicle origin.
6	314/21	15	F	Back	3.0 x 2.5 x 1.5cm	Naevus	Apocrine Hidrocystoma
7	454/21	29	M	Back	0.7 x 0.5 x 0.3 cm	Epidermoid cyst	Steatocystoma multiplex
8	75/22	55	m	Skin	4.0 x 3.5 x 3.0 cm	Epidermoid cyst	Hidradenoma
9	231/22	65	F	Face	5.0 x 3.0 x 2.0 cm	Basal cell carcinoma	Malignant adnexal tumour of eccrine origin.
10	352/22	43	F	Leg	3.0 x 3.0 x 3.0cm	Neurofibroma	Hidradenoma
11	447/22	25	F	scalp	2.0 x 2.0 x 1.5 cm	Cylindroma	Trichoepithelioma
12	372/22	45	F	Perineum	2.0 x 2.0 x 1.5cm	Sebaceous cyst	hidradenoma papilliferum

Table 2: Tumour site and histopathology

S.No	Tumour	Site & clinical details in our study	Histopathology
1	Pilomatrixoma	single case in the scalp measuring 1.7 x 1.2 x 1.0 cm in size	Biphasic pattern of keratinized ghost cells surrounded by variable numbers of basaloid cells. [Figure 7]
2	Proliferating pilar tumour	Single case in scalp measuring 4.5 x 4.0 x 4.0 cm	multiple lobules of squamous epithelium; typical abrupt trichelemmalkeratinisation in the centre [Figure 4]
3	Hidradenoma	3 cases on different sites (leg,skin& scalp) Circumscribed, non encapsulated., masses that lie in the dermis and subcutaneous tissue	Cells with clear and eosinophilic cytoplasm. Usually solid; but they can be cystic. Ductal differentiation can be seen. [Figure 8]
4	Trichoepithelioma	Two cases both cases on scalp measuring 2cm	Symmetric lesion: mixture of epithelial elements ranging from hair germs associated with papillary mesenchymal bodies and small horn cysts.[Figure 1]
5	Malignant adnexal tumor of hair follicle origin	Single case on scalp measuring 3cm, surface ulceration and asymmetry was present	Numerous papillary projections lined by cuboidal cells, cellular pleomorphism, frequent mitosis and foci of necrosis which were seen in our case signify the malignant features. The deep resected margin was free.[Figure 6]
6	Apocrine Hidrocystoma	One case reported on back measuring 3cm	Cystic spaces lined by double layer of epithelial cells: outer layer of myoepithelial cells & inner layer of tall columnar cells.[Figure 9]
7	Steatocystoma multiplex	One case reported on back measuring 0.7cm	Cyst with lining similar to corrugated cuticle of sebaceous ducts with sebaceous glands. [Figure 2]
8	Malignant adnexal tumour of eccrine origin	Multiple swelling present on face largest measuring 5cm with clinical signs of malignant transformation like rapid growth, ulceration, bleeding and pain were present	Nests separated by hyalinised stroma around cell nests, loss of peripheral palisading of cells, bimorphic population of cells, cellular pleomorphism, frequent mitosis and foci of necrosis which were seen in our case signify the malignant features. The tumour was seen extending up to the deep resected margin [Figure 3]
9	Hidradenoma papilliferum	Single swelling measuring 2cm present in perineal area	An adenoma with apocrine differentiation located in the dermis with tubular and cystic structures with papillae projecting in to them. [Figure 5]

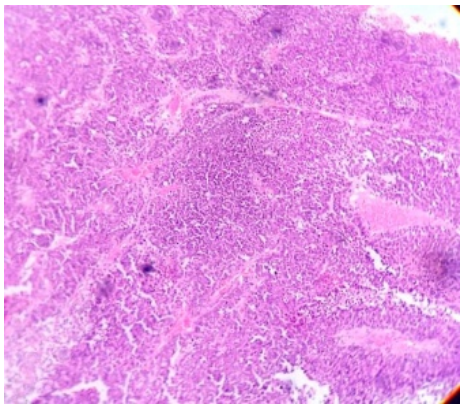

Fig. 6: H & E: Malignant adenexal tumour: tumour shows numerous papillary projections lined by cuboidal cells, cellular pleomorphism, frequent mitosis and foci of necrosis which were seen in our case signify the malignant features. (H&E X10)

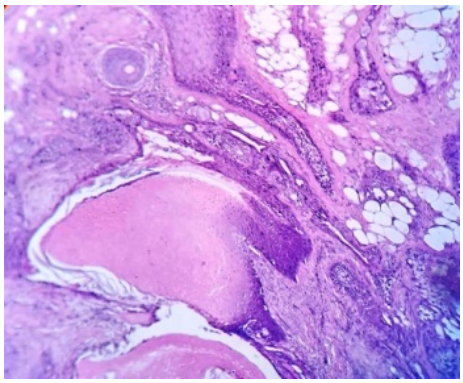

Fig. 7: H & E: Pilomatrixoma: Basaloid cells and ghost cells (H&E X10)

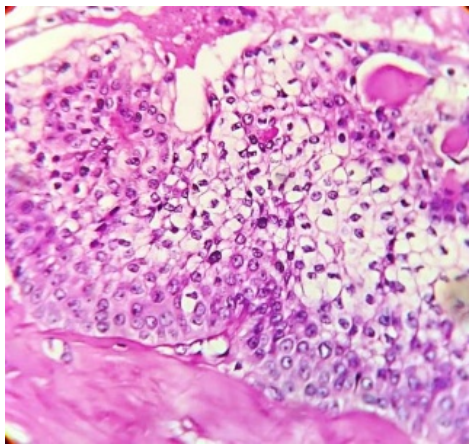

Fig. 8: H & E: Hidradenoma: The tumor shows two types of cells one with eosinophilic cytoplasm and other with clear cytoplasm (H&E X10)

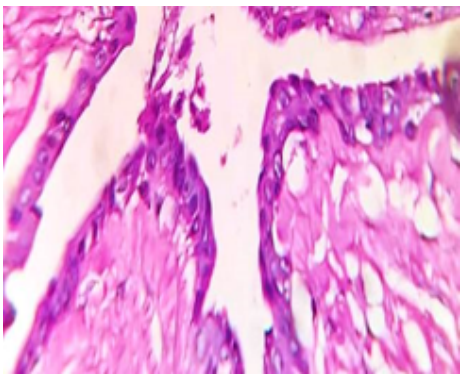

Fig. 9: H & E: Apocrine hidrocystoma: The dermis contains the lesion with multi loculation lined by a row of columnar secretory cells with focal papillary projections (H&E X10)

cases were dermoid cysts. In 12 cases out of 30 biopsied, it was confirmed as an appendageal tumour. There were 11 cases with the tumours situated in the head and neck region, and one case is noted in the vault. They presented as nodules and tumours. Six tumours were more than 3 cm in size, and one case with a diameter greater than 5 cm was diagnosed as a malignant adnexal tumour of eccrine origin. The rest of the five tumours measured less than 3 cm. Hair follicular differentiation tumours were found in 5 cases (41%).Eccrine and apocrine tumours were found in 5 cases (41%). Malignant tumours were two of the types that constitute 16% of appendageal tumors. One was showing eccrine differentiation, and the other had multiple swellings on the face and nasolabial area exhibiting sebaceous differentiation. A syndromic association was suspected, and patients were referred to a higher centre for treatment. The morphology of both cases is described in [Table 2].

3. Discussion

The SATs include a big and diverse category of neoplasms and histopathology is considered the gold standard in the diagnosis.[3,4] The inidence of SATs in our study is 0.123 percent. The male female ratio is 1:3. The benign-to-malignant ratio is 5:1. [Table 2] lists the benign and malignant tumours that were reported in our case series. Two malignant tumours were reported in our study. The present study shows nodular hidradenoma as the predominant tumour similar to Radhika K et al.,[5] and trichoepithelioma[6] is the next common tumour. Trichoepitheliomas were the most common tumours in other studies.[7] The general characteristics that distinguish benign from malignant SATs are symmetrical lesions, homogenous collections of epithelial cells, and the absence of necrosis, atypia, and mitosis as characteristics of benign tumours.[8]

4. Conclusion

Histopathology is considered the gold standard for the diagnosis of SAT. Before removing them, it is crucial to search for malignant characteristics, as despite their rarity, malignant SATs are aggressive. More cases sent for biopsy reduces the chance of missing a malignant case.

5. Authorship

All the authors have contributed enough towards this publication to justify authorship criteria.

6. Conflict of Interest

There is no conflict of interest of any of the authors with the results of this study.

7. Source of Funding

None.

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