SKIN ADNEXAL TUMOURS - INSTITUTIONAL STUDY IN SOUTH ODISHA
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ABSTRACT

BACKGROUND
Skin adnexal tumors though less common are diverse group of skin tumors that originate from or show differentiation toward adnexal epithelial structures are classified according to embryologic and histologic features into sweat gland tumors (eccrine, apocrine), follicular and sebaceous. Usually they are rare tumor, clinically misdiagnosed, histology helps in establishing the diagnosis.

MATERIALS AND METHODS
Prospective & retrospective study was conducted in the Department of Pathology, MKCG Medical College over a period of 4 years. Total 31 cases were included, in our study diagnosed to have Skin adnexal neoplasm and confirmed by histopathology. All the specimens were formalin fixed, processed and stained with H&E and special stains wherever necessary.

RESULTS
Tumors with follicular differentiation constituted the maximum number, 15 cases (48.4%) followed by eccrine tumor 13 cases (42%); tumors of apocrine differentiation 3 cases (9.6%).

CONCLUSION
Cutaneous adnexal neoplasms are relatively uncommon neoplasm with distinct histological features, commonly distributed in head and neck region, with slight male predominance in our study.

KEYWORDS
Cutaneous Adnexal Tumor, Histopathology, SAT (Skin Adnexal Tumor).


BACKGROUND
Cutaneous adnexal neoplasms are a large and varied group of neoplasms which differentiate towards pilosebaceous apparatus, apocrine and eccrine sweat glands.¹⁻³ However, the apparent differentiation is not always distinct, and some tumors can display elements of mixed differentiation to varying degree during neoplastic transformation. These divergences can be due to their origin from pluripotent stem cells.¹⁻⁴ Tumor clinically may present as papules and nodules usually solitary lesion, but they have distinct histological features.¹⁻⁵ Most SATs are benign. Diagnosis principally relies on histopathology as their clinical presentation is very nonspecific, and they are classified according to predominant morphological component. Exact categorization of benign tumors was believed to be purely academic and not affecting clinical management. However, diagnosing them may have important implications as they might be markers for syndromes associated with internal malignancies, such as trichilemmomas in Cowden's disease and sebaceous tumors in Muir–Torre syndrome.¹⁻³ Malignant tumors are rare, aggressive, have the potential for nodal involvement and distant metastasis with a poor clinical outcome.¹⁻⁴ Therefore, establishing the diagnosis of malignancy in SATs is important for therapeutic and prognostic purposes. In this study we have analysed the frequency, clinical features, gross and microscopic features and the differentiating features between benign and malignant SATs at our centre over a period of four years.

Objectives-
The objectives of this study were to evaluate the histopathology of skin adnexal neoplasms and to correlate with the clinical profile.

MATERIALS AND METHODS
A combined prospective & retrospective study was conducted. Review of all skin adnexal neoplasms reported in the Department of Pathology, MKCG Medical College during the period January 2013 to December 2017 was done. A total of 31 cases diagnosed as SATs on histopathology were included in this study. Clinical detail of patients were documented including age, sex, clinical diagnosis & gross examination. The histopathological examination was carried
out on formalin fixed tissues and paraffin embedded blocks. Haematoxylin & Eosin stained sections were examined and few special stains like PAS & reticulin were performed wherever required. All the slides were reviewed. The concordance of clinical and histopathological diagnosis was all so assessed. The tumors were classified according to predominant pattern of differentiation into follicular, sebaceous, eccrine, and apocrine tumors.

RESULTS
In the present study total 31 cases were found as skin adnexal tumor over a period of 4 years. Majority of tumors were benign adnexal tumors, constituted 93.5% (29/31) cases and minority were malignant adnexal tumors, constituted 6.5% (2/31) cases. The hair follicle tumors constituted the largest group involving 48.4% (15/31) cases followed by the sweat gland tumors 42% (14/31) cases (Table 1). The hair follicle tumors are comprised of 10 proliferating trichilemmal cysts, 3 cases of pilomatrixoma, trichoepithelioma 1 case, trichofolliculoma 1 case. The sweat glands tumors are comprised of nodular clear cell hidradenoma 7 cases, chondroid syringoma 4 cases, apocrine hidrocystoma 2 cases, and syringocystadenoma papilliferum one case. Amongst the benign tumors; proliferating trichilemmal cyst (32.3%, 10/31) and clear cell hidradenoma (22.6%, 7/31) were the most common tumors. Amongst the malignant tumors, malignant hidradenoma and malignant poroma were observed with one case each. The frequency distribution of various lesion is shown in Table- 1. The head and neck region was the most common site affected (77.4%, 16/31) followed by extremities (Table- 2). Rare sites back & genitalia were also involved by tumor on case each. The age of patients varied from 8 years to 79 years. However, the highest incidence was observed in the age group of 41-50 years (25.8%, 8/31). Considering sex, male preponderance was seen. The male -to- female ratio was 1.07:1.

Table 1. Benign Skin Adnexal Tumors with Frequency Distribution

<table>
<thead>
<tr>
<th>Apocrine Tumor</th>
<th>No. of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apocrine hidrocystoma</td>
<td>2</td>
<td>6.40</td>
</tr>
<tr>
<td>Syringocystadenoma papilliferum</td>
<td>1</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Table 2. Site Distribution of Adnexal Tumors

- Head and Neck: 77.4% (24 cases)
- Extremity: 16.1% (5 cases)
- Back: 3.2% (1 case)
- Genitalia: 3.2% (1 case)

Figure 1. Incidence of Adnexal Tumor

Figure 2. Age Distribution of Adnexal Tumors

Figure 3. Photomicrograph of Proliferating Trichilemmal Cyst Showing Cyst Lined with Irregular Lobules of Squamous Epithelium. Epithelium Abruptly Merge in to Central Portion of Lobule. Cyst Containing Amorphous keratin. (H & E, X 100)
Second common tumour in our case was Nodular hidradenoma. These tumors are usually well circumscribed and may appear encapsulated. It is composed of epithelial lobules located in the dermis with various sizes of lumens containing eosinophilic, homogeneous material. In solid portions of the tumor, there are two types of cells, one cell type is polyhedral with a rounded nucleus and slightly basophilic cytoplasm, other cell type is usually round and contains very clear cytoplasm, membrane is distinctly visible; the cell nucleus appears small and dark (Figure- 4. A, B).

DISCUSSION
Incidence of benign skin adnexal tumors is more as compared to malignant cases. SATs are histologically challenging tumors to diagnose. Apart from their malignant counterparts, benign lesions need to be differentiated from squamous cell carcinoma and basal cell carcinoma. Cutaneous adnexal tumors are said to differentiate towards different adnexal cell lines: hair follicle, sebaceous glands, eccrine glands, apocrine sweat glands. They can also differentiate towards more than one cell line in the same tumor. This could probably be due to their origin from pluripotent stem cells.\textsuperscript{1-4} In our study there was differentiation towards single cell line only. Even though most SATs are benign, malignant forms definitely occur but the incidence of malignant tumours is low. Malignant tumors may be: carcinoma of sebaceous glands, eccrine gland, apocrine glands, rarely pilomatrical carcinoma, malignant proliferating trichilemmal cyst and trichilemmal carcinoma. In the present study, 93.5\% tumors were benign and 6.5\% tumors were malignant, which was also seen in studies of Radhika et al.\textsuperscript{5} In our study there were two malignant tumours reported: malignant hidradenoma, malignant poroma. There are certain general characteristic differentiating features between benign and malignant SATs. Benign tumors show symmetry, vertical orientation with V-shape, uniform collection of epithelial cells with dense fibroptic stromal reactions around tumor cells and absence of necrosis, atypia and mitosis with diminished tumor associated sclerotic stroma. Tirumalee et al., have stressed the importance of examining under scanner view magnification to assess the silhouettes of SATs to differentiate benign and malignant tumours.\textsuperscript{7} In our study both the malignant tumors displayed asymmetry, horizontal orientation of tumor with lack of lobulation. Irregular arrangement of cells with infiltration, necrosis, atypia and frequent mitosis, with diminished tumor associated sclerotic stroma. Present study shows hair follicular differentiation as the predominant tumor. In some other studies, nodular hidradenoma is the predominant tumour.\textsuperscript{5} Gayathri et al., in their study have described trichoepithelioma of hair follicular origin to be the predominant tumour.\textsuperscript{6} Our study had majority of hair follicular tumor. The location of skin adnexal tumor varies with the histologic type. Head & neck region is the most common location frequently encountered, other sites being axilla, trunk, legs etc. Radhika et al observed that head and neck region was the most common site of occurrence, which was also noted in our study (77.4\% in Table-2). The most common sites of involvement were found to be head & neck region followed by extremities.

CONCLUSION
To summarise, cutaneous adnexal tumors are uncommon, and they are not routinely encountered in the surgical pathology practice. Their clinical presentation is very nondescript, and histopathology is the gold standard for diagnosis. Though the malignant SATs are rare, they are aggressive, and always it is important to look for malignant
features and surgical margins before signing out the adnexal tumors.

REFERENCES


