CLINICO-PATHOLOGICAL STUDY OF ADNEXAL TUMORS OF SKIN

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ABSTRACT

The aims of this work is to determine the spectrum of histopathological patterns of Adnexal tumors of skin, to characterise the tumors histologically according to World Health Organization (WHO) classification system for skin adnexal tumors and to analyse the tumor with regard to behaviour, anatomic location and sex of the patient. The study was conducted retrospectively at the department of Pathology; in a Tertiary care Hospital in South India. Study duration was 3 years from June 2009 to June 2012. All the Adnexal tumors received during this period were collected and Hematoxylin and Eosin and slides of special stains of the same were reviewed and lesion were characterised according to WHO classification system for Skin Adnexal Tumors. 40 cases of Adnexal tumors were diagnosed during the study period. 36 cases (90%) were benign, while 4 cases (10%) were malignant. Tumors were observed more commonly in females with M: F ratio of 1.5:2. Most tumors were localized to head and neck region (62.5%), followed by trunk and upper limb (27.5%), abdomen and lower limb (7.5%) and labia majora (2.5%). Most common tumors were Eccrine tumors 18 cases (45%), followed by 12 cases (30%) of Pilar tumors, 7 cases (17.5%) of Apocrine tumors and least common being tumors with sebaceous differentiation 3 cases (7.5%). Practically adnexal tumors of Skin have been historically classified into 4 groups. However, in some cases, the diagnosis of Adnexal neoplasm presents unique difficulties. Although most of these tumors are benign, it is important to diagnose them accurately, if incompletely excised can recur and evaluation of margins is recommended.

Key words: Adnexal tumors, eccrine tumors, pilar tumor, apocrine tumor, sebaceous tumor

INTRODUCTION

Neoplasms of cutaneous appendages are rare lesions and since they are so infrequently encountered in practice, they may cause difficulty in diagnosis. These tumors can differentiate in the directions of any of the four types of cutaneous appendages that are
eccrine sweat glands, apocrine sweat glands, Sebaceous glands and Hair follicles. Although most of these tumors are benign, it is important to diagnose them accurately since many of such tumors are genetically predetermined and may arise in the form of multiple potentially disfiguring lesions, or may represent sites of predilection for later development of more aggressive tumors, or may themselves be locally aggressive or capable of metastasis and may be misdiagnosed as metastatic tumours to the skin. Apart from their rarity, difficulties in diagnosis can also result due to their large variety; their frequent differentiation along two or more adnexal lines simultaneously and their complicated nomenclature. The aim of our study was to determine spectrum of adnexal tumors with respect to different histological pattern, anatomical location, site, and age and sex incidence.1-2.

MATERIALS AND METHODS

A retrospective study of all the Adnexal Tumors of Skin received at our centre were collected and analysed for duration of 3 years from June 2009 to June 2012. Slides of 40 cases were retrieved and studied. All Hematoxylin and Eosin stained slides were reviewed and slides of special stains were also correlated wherever performed. Relevant history that is age, gender, site/sites involved size where collected and documented. Lesions occurring in all the age group were included. Sites were categorised into those arising from Head and Neck, Trunk and Upper Limb, Abdomen and Lower Limb and Labia Majora. (The tumors were confirmed by Histopathological examination, were characterised according to WHO classification system for Skin Adnexal Tumors. All the tumors were analysed considering histological type, behaviour, anatomic location and gender of the patient. Detailed microscopic examination was carried out. Tumors were classified as Eccrine Tumors, Pilar Tumors, Apocrine Tumors and Sebaceous Tumor. Eccrine tumors encountered were Eccrine Spiradenoma, Chondroid Syringoma, Syringoma, Cylindroma, Nodular Hidradenoma, Eccrine Hidrocytoma, Eccrine Poroma and Syringoid eccrine Carcinoma. Pilar tumors encountered were Pilomatrixicoma, Trichoepithelioma, and Proliferating Trichelemmal cyst. Apocrine Tumors encountered were Hidradenoma Papilleferum, Syringocystadenoma Papilleferum, Apocrine Hidrocytoma, Apocrine Cystadenoma, and Adenocarcinoma of eyelid. Sebaceous Tumors encountered were Sebaceous Hyperplasia, Sebaceous carcinoma and Meibomian Carcinoma.

RESULTS

A total of 40 Neoplasms of skin appendages were diagnosed during the study period at our department. During the study we observed that incidence of Adnexal Tumors of Skin was very low as compared to total burden of Surgical specimen received (<1%). Most of the tumors were found to be Benign (90%) (Table 1). Incidence of malignancy was low (10%). Tumors were observed more common in females as compared to males with Male to Female ratio of 1.5:2(Table 2). Most of the tumors were localised to head and neck region (62.5%), followed by trunk and upper limb (27.5%), abdomen and lower limb.
Clinico-pathological study of adnexal tumors of skin

(7.5%) and labia majora (2.5%) (Table 3) Tumors with Eccrine differentiation (45%), pilar differentiation (30%) was common lesion when compared to incidence of tumor with apocrine (17.5%) and sebaceous differentiation (7.5%) (Table 5). Eccrine tumors (n=18) encountered were sub classified into Eccrine Spiradenoma (33%), Chondroid Syringoma (22%), Syringoma (16%), Cylindroma (6%), Nodular Hidradenoma (6%), Eccrine Hidrocytoma (6%), Eccrine Poroma (6%) and Syringoid eccrine Carcinoma (6%). Pilar tumors (n=12) sub classified into Pilomatricoma (67%), Trichoepithelioma (25%), Proliferating Trichelemmal cyst (8%). Apocrine Tumors (n=7) were further sub classified into Hidradenoma Papilleferum (29%), Syringocystadenoma Papilleferum (14.2%), Apocrine Hidradenoma (14.2%), Apocrine Cystadenoma (14.2%), Apocrine Hidrocystadenoma (14.2%), Adenocarcinoma of eyelid (14.2%). Sebaceous Tumors (n=3) were further sub classified into Sebaceous Hyperplasia (33%), Sebaceous carcinoma (33%) and Meibomian Carcinoma (33%).

Table 1. Distribution of tumors according to their behavior.

<table>
<thead>
<tr>
<th>Types of Neoplasms</th>
<th>Number of cases (n=40)</th>
<th>Percentage of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign</td>
<td>36</td>
<td>90%</td>
</tr>
<tr>
<td>Malignant</td>
<td>4</td>
<td>10%</td>
</tr>
</tbody>
</table>

Table 2. Gender distribution of Adnexal Tumors in our study.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number of cases (n=40)</th>
<th>Percentage of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>15</td>
<td>37.5%</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>62.5%</td>
</tr>
</tbody>
</table>
DISCUSSION

Skin adnexal Neoplasms comprise a wide spectrum of benign and malignant tumors that exhibit morphological differentiation towards one or more types of adnexal structures found in normal skin. They are clustered according to their adnexal differentiation based on histological, ultrastructural and immunohistochemical analysis as Eccrine, Follicular, Apocrine and Sebaceous origin. However, the apparent differentiation is not always clear since some tumors display elements of mixed differentiation. The need for special and/or immunohistochemical stains in the evaluation of SAT varies from one case to another and can be helpful to demonstrate cytoplasmic glycogen contents and stromal hyalinised basement membrane that is present in certain cutaneous adnexal lesions. Hales colloidal iron stain for acid mucin is helpful in demonstrating iron deposits within apocrine

Table 3. Gender distribution of Adnexal Tumors according to location.

<table>
<thead>
<tr>
<th>Site Involved</th>
<th>Number of cases (n= 40)</th>
<th>Percentage of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head and neck</td>
<td>25</td>
<td>62.5%</td>
</tr>
<tr>
<td>Trunk and upper limb</td>
<td>11</td>
<td>27.5%</td>
</tr>
<tr>
<td>Abdomen and lower limb</td>
<td>3</td>
<td>7.5%</td>
</tr>
<tr>
<td>Labia Majora</td>
<td>1</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Table 4. Distribution of tumors according to their origin (N = 40).

<table>
<thead>
<tr>
<th>Types of neoplasm</th>
<th>Number of Cases</th>
<th>Percentage of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eccrine Differentiation</td>
<td>18</td>
<td>45%</td>
</tr>
<tr>
<td>Hair follicle Differentiation</td>
<td>12</td>
<td>30%</td>
</tr>
<tr>
<td>Apocrine Differentiation</td>
<td>7</td>
<td>17.5%</td>
</tr>
<tr>
<td>Sebaceous Differentiation</td>
<td>3</td>
<td>7.5%</td>
</tr>
</tbody>
</table>
lesions. IHC and ultrastructural ancilliary studies may aid in establishing the tumor differentiation, but they have limited diagnostic value and yield\(^3\)\(^-\)\(^5\).

Also, even with data obtained from electron microscopy and immunohistochemical analysis, discordant opinions exist regarding the precise cell of origin of many of the tumors. The existence of pluripotent stem cells able to differentiate along multiple lines may be reasonable hypothesis to explain these divergences. A malignant counter part of almost every of skin adnexal tumors has been described. These tumors are rare, locally aggressive and hence the potential for nodal involvement and distant metastasis, with poor clinical outcome. Therapeutic and prognostic purposes. The tumors can act as marker for internal malignancy that is multiple trichilemmoma acts as a marker for breast malignancy and this association is called as Cowden’s disease. Sebaceous tumors are associated with Muir – torre syndrome\(^6\)\(^-\)\(^8\).

The present study was carried out in the department of Pathology, study at a Teriarty care hospital in South India for a period of 3 years that is from June 2009 to June 2012. During the study we observed that the incidence of adnexal tumors were very low compared to the total Surgical burden (<1%), Majority of the tumors were benign (90%) with incidence of malignancy being very low (10%) which was in accordance with studies by Jindal U, Patel R\(^9\) and Samaila MO\(^10\) and with the majority of the studies. Tumors encountered were Eccrine tumors followed by pilar tumors and least were apocrine and sebaceous tumors which. Tumors were more common in females as compared to males with M: F ratio of 1.5:2, most of the adnexal tumors were found to be less than 2cm, similar was noted in study by Jindal U and Patel R. In a large study of 166 adnexal tumors of Skin by Yaqoob Y et al\(^11\) male is to female ratio was almost equal, 37.34% showed eccrine differentiation, 14.45% showed apocrine differentiation, 41.56% showed pilosebaceous differentiation, 6.62% exhibited mixed differentiation with 5 commonest tumors were Pilomatricoma, nodular Hidradenoma, Syringocystadenoma Papilleferum, eccrine poroma and eccrine Spiradenoma. The commonest malignant tumor being porocarcinom and sebaceous carcinom\(^12\).

CONCLUSION

Practically adnexal tumors of Skin have been historically classified into 4 groups. However, in some cases, the diagnosis of Adnexal neoplasm presents unique difficulties. Although most of these tumors are benign, it is important to diagnose them accurately, if incompletely excised can recur and evaluation of margins is recommended.

COMPETING INTERESTS

The authors declare no competing interest.

REFERENCES