



HISTOPATHOLOGICAL SPECTRUM OF TUMEFACTIVE LESIONS OF SEBACEOUS GLAND

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ABSTRACT

Sebaceous gland tumours are rare and include a spectrum of benign and malignant conditions. We analysed sebaceous gland tumefactive lesions received in surgical pathology section of a tertiary care hospital over a period of 25 years. Out of total 30 cases, Nevus sebaceous was commonest(19), followed by sebaceous carcinoma(7) and sebaceous adenoma(4).Majority were solid (28) and situated in Head Face Neck region(25). Nevus sebaceous was associated with other neoplasm in 3 cases (Syringocystadenoma papilliferum 2 and Trichilemmoma 1). In sebaceous carcinoma, 3 cases had lymph node metastasis at presentation. Accurate histopathological diagnosis of sebaceous lesions is necessary for their proper management and to evaluate associated syndrome.

KEYWORDS : Adnexal tumours, Sebaceous tumours, Skin tumours

Introduction:

Skin adnexal tumours are rare and amount to 0.005% of all skin lesions¹. These tumours have been classified as per structure of origin i.e. hair follicles, sebaceous gland, eccrine and apocrine glands. Majority of them are benign and pose a cosmetic problem whereas few malignant neoplasms may be associated with syndromes.

Sebaceous glands are distributed over the entire body surface except the palms, soles and dorsa of the feet. Due to their mode of development almost every sebaceous gland is joined to a hair follicle. Each sebaceous lobule possess a peripheral cuboidal germinative cells with deeply basophilic cytoplasm, centrally located cells with vacuolated cytoplasm and a scalloped nucleus, owing to compression by lipid globules. The common excretory duct connecting many lobules is lined by stratified squamous epithelium.²

Sebaceous gland lesions usually contribute to approximately 20% of adnexal tumours. Rulon and Helwig (1974) separated sebaceous neoplasms into 3 categories: sebaceous adenomas, basal cell carcinoma with sebaceous differentiation& sebaceous carcinomas³; whereas Pinkus and Mehregan (1976) recognized four categories namely sebaceous adenoma, sebaceous epithelioma, basal cell carcinoma with sebaceous differentiation and adenocarcinoma of sebaceous glands. Many workers have included Nevus Sebaceous among neoplasms⁴.

The present study includes analysis of sebaceous gland tumors received in Surgical Pathology section of a tertiary care hospital over a period of 25 years.

Material and Methods:

All the tissue specimens received in surgical pathology section with final diagnosis of sebaceous gland neoplasm were included in this study. The non-neoplastic lesions like sebaceous hyperplasia were excluded. Nevus sebaceous was included in the study as it is known to be associated with adnexal neoplasms.

Clinical profile along with duration of lesion, symptoms, fine needle aspiration or other investigations was recorded. Formalin fixed tissues with paraffin sections were stained by Haematoxylin – Eosin stain. Special stains like Sudan 3, Oil Red O were done whenever necessary. Morphological details were studied for appropriate histopathological diagnosis. A detail clinicopathological analysis was made and unusual cases were discussed in detail. The results were compared with the literature.

Results:

Out of total 30 cases, 23 were benign (Nevus sebaceous 19 and Sebaceous adenoma 4). Remaining 7 were sebaceous carcinoma. Head Face Neck was the commonest site (25) and multiple lesions were seen in 3 cases.

Table 1: Age and Sex distribution

Tumour	Age Range	Mean Age	M:F	Total
Nevus Sebaceous	5-28	18.6	13:6	19
Sebaceous Adenoma	10-60	32	2:2	4
Sebaceous Carcinoma	38-70	60.5	3:4	7

Table 2: Size Distribution & Gross appearance

Tumour	Size Range	Mean Size	Solid	Solid-cystic	Cystic	Total
Nevus Sebaceous	0.3-10	2.09	19	-	-	19
Sebaceous adenoma	0.7-1	0.8	3	1	-	4
Sebaceous Carcinoma	1-7	5.1	6	1	-	7

Histopathology of sebaceous gland tumours:

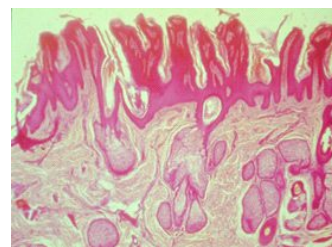


Figure 1: Nevus Sebaceous showing hyperkeratosis, papillomatosis and hyperplasia of sebaceous glands (H and Ex 100)

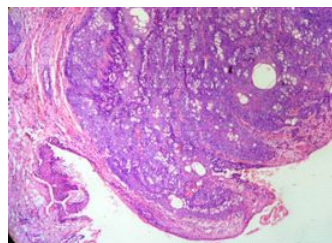


Figure 2: Sebaceous adenoma showing incompletely differentiated sebaceous follicles with basaloid and sebaceous cells (H and Ex 100)

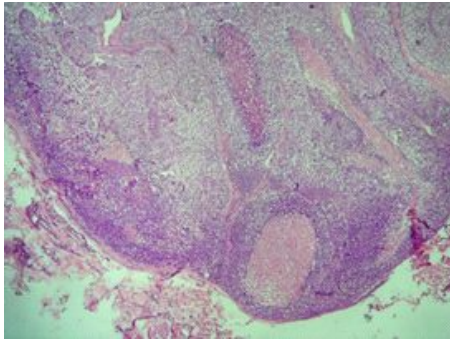


Figure 3: Sebaceous Carcinoma showing lobules of predominantly undifferentiated cells with foci of necrosis (H and Ex40)

Discussion:

Variable incidence of sebaceous gland neoplasms has been reported in literature. We had 30 cases which accounted for 15.4% of all adnexal tumours. This was comparable to Reddy et al who reported 21.2%.⁶ Higher percentage of benign tumours (23/30) in our study was consistent with Vaishnav et al⁷ and Nair et al⁸. Sirsat et al have reported higher frequency of malignant tumour being from cancer referral institute⁹.

Nevus sebaceous of Jadassohn (Fig 1): Robinson (1932) introduced the term 'sebaceous nevus of Jadassohn' for the localized lesions of the face and scalp characterized by papillomatous epidermal hyperplasia and an excessive number of enlarged sebaceous glands.¹⁰

These formed the most common tumefactive lesions (19/30) in our series. The cases presented in age range of 5 to 28 years with mean age of 18.6 years and showed male preponderance. This was comparable to Cribier et al who have reported mean age of 25.4 years and male predominance¹¹.

Head, face and neck region was the commonest site in our study where 89.4% tumours were located. This correlated well with Mehregan and Pinkus (94.66%). Scalp was commonest single site in our study (43.4%). Our lesions presented as plaques with wide variation in size ranging from 0.3 to 10 cm. Extensive pigmented verrucous plaque measuring 10 cm in size was observed in a 18 year old female. Such a large nevus has been rarely reported in literature.

Mehregan and Pinkus (1965) have described three stages in the life history of nevi¹²:

1. An early stage occurs in infancy and childhood and is often characterized by underdevelopment of hairs and sebaceous glands.
2. A second stage usually begins at puberty and leads to massive development of sebaceous glands, papillomatous epidermal hyperplasia and maturation of apocrine glands which are present in a considerable number of cases.
3. The third stage is due to the complicating development of benign and malignant nevoid tumours in the original nevus.

These authors found 52 tumours developing within organized nevi in 33 cases. In 20 cases only one type of tumour developed in a lesion, in eight cases two different types, in four cases three different types and in one case four different types of tumours developed¹².

Four of our cases were biopsied in childhood and showed only epidermal hyperplasia and underdeveloped follicles depicting early stage. In remaining 15 cases, biopsy was performed after puberty. These cases showed epidermal papillomatosis and sebaceous gland hyperplasia.

Three of our cases were in stage 3 with syringocystadenoma

papilliferum developing in 2 cases and trichilemmoma in one case. Cribier et al have reported Syringocystadenoma Papilliferum as the commonest tumour arising in nevus sebaceous followed by trichoblastoma¹¹.

Sebaceous adenoma (Fig 2): We had 4 cases of adenoma accounting for 13% of sebaceous gland tumours. Mean age of our cases was 32 which was comparable to Reddy et al⁶ and Sirsat et al. HFN was the commonest site as observed by others. One case showed multiple papules on face as well as back. The lesions in our study were mostly solid with mean size of 0.8cm. One of tumours presented as 7mm long cutaneous horn on upper lip in a 60 year old female. On histopathology, all the cases showed lobules comprising of central foamy cells of sebaceous differentiation and peripheral basophilic germinative cells.

Sebaceous Carcinoma (Fig 3): Our study included 7 cases of sebaceous carcinoma amounting to 23.3% which was lower as compared to Sirsat et al⁹. (55%) who presented a study from cancer referral centre. Majority of these cases occurred in older patients with mean age of 60.5 years. Others have also reported a peak in 5th, 6th or 7th decade. Five cases were located on face (3 on eyelid, 1 periorbital, 1 on nasolabial fold). Three of our cases had extraorbital location with one involving buttock and other 2 were on leg. The most common site for extra palpebral sebaceous gland carcinoma has been reported on scalp¹³. Three of our cases showed LN mets (2 eyelid and one thigh lesion)

On histopathology, tumour showed irregular lobules of variable sizes with central comedo necrosis. Lobules comprised of undifferentiated cells as well as distinct sebaceous cells showing foamy cytoplasm. Abnormal mitoses, moderate nuclear pleomorphism and necrosis were observed in all cases. Urban and Winkelman (1961) studied cases of sebaceous malignancy and differentiated them into three types¹⁴.

- a) Sebaceous gland carcinoma
- b) Basal cell epithelioma with sebaceous differentiation and
- c) Squamous cell epithelioma with sebaceous differentiation.

Presence of sebaceous cells in these tumours does not in any way indicate their origin but only emphasizes the fact that at times neoplastic cells can undergo sebaceous differentiation¹⁵.

Murata-T et al (1993) observed that when sebaceous carcinoma is suspected, a monoclonal antibody against low molecular weight keratin (54 kd), can be a useful IHC tool to rule out squamous cell carcinoma and basal cell epithelioma¹⁶.

Nelson et al (1995) showed that intracytoplasmic lipid droplets are important features of sebaceous carcinoma. Special stains Oil red O and Sudan IV help in diagnosis¹⁷. Sebaceous carcinoma can be distinguished from eccrine porocarcinoma, malignant clear cell hidradenoma, extra mammary Paget's disease, malignant trichilemmoma, squamous cell carcinoma and basal cell carcinoma by histochemical and immunohistochemical techniques using formalin fixed and paraffin embedded tissue specimens¹⁸.

Marenda S.A. and Otto R.A. (1993) showed that sebaceous carcinoma has visceral involvement in Muir-Torre syndrome¹⁹. Spencer J.M. (2001) showed that 75% cases were seen in periocular region, 40% cases were seen with Muir Torre syndrome. In United States, sebaceous carcinoma had incidence of 1.5-5% of eyelid malignancy²⁰.

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