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Original Research Article

A histopathological study of sebaceous neoplasms and related lesions at a tertiary care centre

Swagata Dowerah[1], Munmun Harlalka[2]*

[1]Department of Pathology, Silchar Medical College, Silchar, Assam, India
[2]Department of Pathology, Jorhat Medical College, Jorhat, Assam, India

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***Correspondence:**
Dr. Munmun Harlalka,
E-mail: munmunhrlka@gmail.com

ABSTRACT

Background: Sebaceous lesions have intrigued pathologists and dermatologist alike causing a great deal of diagnostic confusion. Tumors and tumor like conditions of the sebaceous glands include sebaceous hyperplasia, Nevus sebaceus of Jadassohn, sebaceous adenoma, sebaceoma and sebaceous carcinoma.
Methods: A three-year study of all lesions with sebaceous differentiation was carried out in the histopathology section of a tertiary care hospital to study the spectrum of lesions showing sebaceous differentiation. Patient records were noted, and paraffin embedded sections stained with haematoxylin and eosin were examined for histopathological diagnosis. Clinical correlation was done in all the cases.
Results: The spectrum of lesions encountered included sebaceous carcinoma, Nevus sebaceous, sebaceous hyperplasia, sebaceous adenoma among others. Eyelid was the most common site followed by scalp. Clinicopathological correlation was found to be poor in these lesions with clinical examination failing to correctly identify most of the cases.
Conclusions: Sebaceous neoplasms were seen to be rarer in our population as compared to other adnexal tumors. Histopathology, in the presence of typical features, is the mainstay of diagnosis with immunohistochemistry aiding in certain doubtful cases.

Keywords: Adnexal tumors, Histopathology, Sebaceous lesions

INTRODUCTION

Sebaceous lesions have intrigued pathologists and dermatologist alike causing a great deal of diagnostic confusion. Tumors and tumor like conditions of the sebaceous glands include sebaceous hyperplasia, Nevus sebaceus of Jadassohn, sebaceous adenoma, sebaceoma and sebaceous carcinoma. Urban and Winkleman in their study of sebaceous malignancies differentiated them into three types- Sebaceous carcinoma, basal cell carcinoma with sebaceous differentiation and squamous cell carcinoma with sebaceous differentiation.[1] Basaloid neoplasms like trichoblastoma and apocrine poroma can also show sebaceous differentiation. The histopathologic hallmark is that the sebaceous neoplasms will contain lipid-laden sebocytes characteristically centrally-placed, with crenate nuclei and vacuolated, soap-bubble cytoplasm.[2]

Sebaceous carcinoma (SC) is a rare malignant tumor that arises from the adnexal epithelium of sebaceous glands.[3] They have traditionally been classified into ocular and

extraocular forms, the extraocular SC occurring most commonly in the head and neck, but also in the vulval area, penis and other sites.[4,5] Microscopically, sebaceous carcinomas show together with evidence of sebaceous differentiation, prominent atypia, increased mitotic activity, and invasive features. Immunoreactivity for keratin and cytokeratin, EMA, Leu-M1 (CD15), and adipophilin is present in sebaceous carcinoma, whereas CEA and S-100 protein are absent.[6,7]

Sebaceous hyperplasia generally seen on the face, usually in patients after 40 years of age. Histological features comprise of sebaceous glands with increased numbers of sebaceous lobules which are often enlarged and a dilated duct in the center which is connected with the overlying epidermis.[8] Nevus Sebaceous is composed of a hamartomatous conglomerate of large sebaceous glands associated with heterotopic apocrine glands, defective hair follicles, acanthosis, and papillomatosis.[9]

Sebaceous adenoma presents as a nodular lobulated growth with generative cells at the periphery and cells showing sebaceous differentiation toward the center.[10] Sebaceoma or sebaceous epithelioma is characterised by either a well circumscribed nodule or irregularly shaped masses of cells in which majority of cells are undifferentiated basaloid cells with significant aggregation of mature sebaceous and transitional cells.[11]

In view of the large number of lesions showing sebaceous differentiation, correct identification of these lesions prove to be a problem not only clinically but also at the histopathological level. Keeping this in mind, we carried out a histopathological study of neoplasms with sebaceous differentiation along with their clinical correlation. The present study was carried out in the surgical pathology section of a tertiary care teaching hospital over a period of three years.

METHODS

A three year study was carried out in the histopathology section of the department of Pathology of a tertiary care hospital from 2016 to 2018. All cases showing tumors with sebaceous differentiation were included in the study. Patient records were examined and the clinical presentation, age, sex, clinical diagnosis were recorded. Gross features of the specimen were noted and tissue was processed according to standard protocol. Paraffin embedded sections stained with haematoxylin and eosin stain were examined for appropriate histopathological diagnosis. Clinical correlation was done in all the cases. Wherever fine needle aspiration cytology had been done prior to excision, the slides were examined and diagnosis was noted. The results were compared with available literature. This was a descriptive study which was conducted from 2016 to 2018.

Objectives of the research topic was to study the spectrum of benign and malignant lesions showing sebaceous differentiation and clinicopathological correlation of these lesions.

Inclusion criteria

All tumors received during this period which showed sebaceous differentiation.

Exclusion criteria

- All other skin tumors which did not show sebaceous differentiation,
- Cases where sample was inadequate for any diagnosis.

Clinicopathological correlation was done in all the cases. Cases of nevus sebaceous were also included under sebaceous lesions.

RESULTS

A total of 9 cases of sebaceous lesions were diagnosed histopathologically. The mean age of malignant lesions was 70yrs and that of benign lesions was 19.2 yrs. The most common sebaceous lesion was sebaceous carcinoma (3 cases) which was seen mainly in the elderly population with an average age of 66.3 yrs. Eyelid was the most common site of sebaceous carcinoma. Lobular growth pattern was seen in all the cases with two of the cases showing comedo necrosis. Cytological diagnosis of sebaceous carcinoma was present in two of the three cases (Figure 1, 2 and 3).

Figure 1: A patient with sebaceous carcinoma in left lower eyelid.

Other lesions (Table 1) included nevus sebaceous (Figure 4)), sebaceous adenoma (Figure 5), sebaceous hyperplasia, SCC with sebaceous differentiation and a case of trichelemmoma with a focal area showing sebaceous changes (Biopsy was not adequate in this case, presence of nevus sebaceous in the same could not be reliably ruled out).

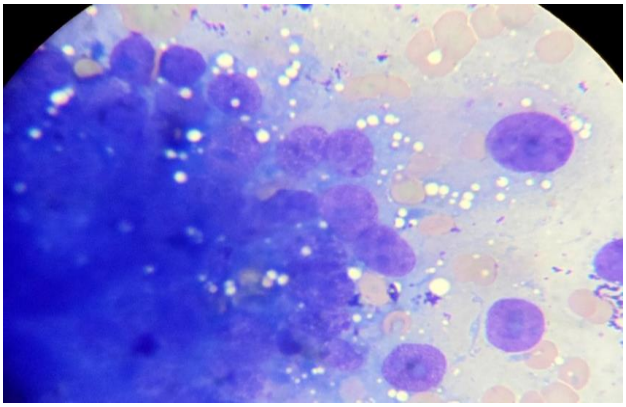

Figure 2: FNA cytology of sebaceous carcinoma showing vacuolated cells (MGG,40X).

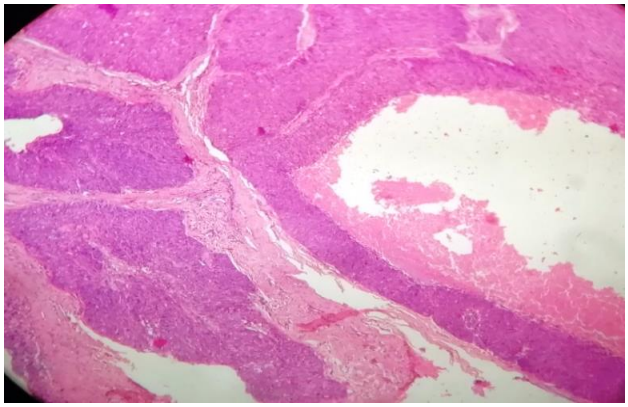

Figure 3: Irregular lobules of cells with sebocytic differentiation (10X, H and E).

Table 1: The types of sebaceous lesions diagnosed histologically.

Age	Sex	Site of the lesion	Clinical Diagnosis	Histopathological diagnosis
9yrs	M	Scalp	Condyloma	Nevus Sebaceous
13 yrs	M	Scalp	Nevus Sebaceous	Sebaceous hyperplasia
16yrs	M	Lower eyelid	Benign adnexal tumor	Sebaceous adenoma
74yrs	F	Upper eyelid	-	Moderately differentiated Sebaceous carcinoma
75yrs	M	Upper eyelid	Sebaceous carcinoma	Moderately differentiated Sebaceous carcinoma
81yrs	F	Scalp	Squamous cell carcinoma	Squamous cell carcinoma with sebaceous differentiation
41yrs	F	Eyelid mass	Sebaceous carcinoma	Trichilemmoma with sebaceous differentiation
50yr	F	Lower lid	Squamous cell carcinoma	Sebaceous carcinoma
17yrs	F	Scalp		Nevus sebaceous

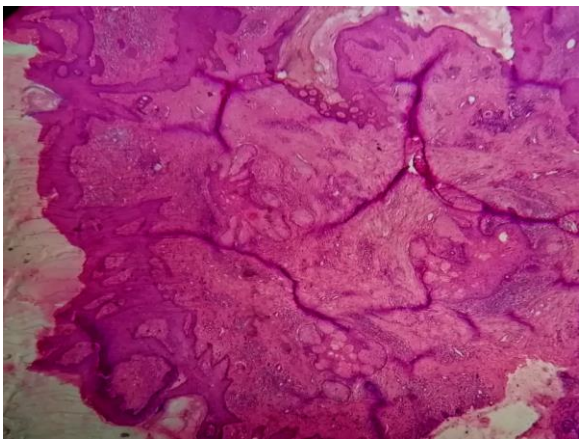

Figure 4: Nevus sebaceous with hyperplasia of overlying epidermis (H&E, 10X).

In our study, the most common site of sebaceous lesions was eyelid (5 cases) followed by scalp (4 cases). Clinical diagnosis correlated with histopathological diagnosis in only 22% of cases. Sebaceous carcinomas were commonly misdiagnosed as squamous cell carcinomas by the clinicians.

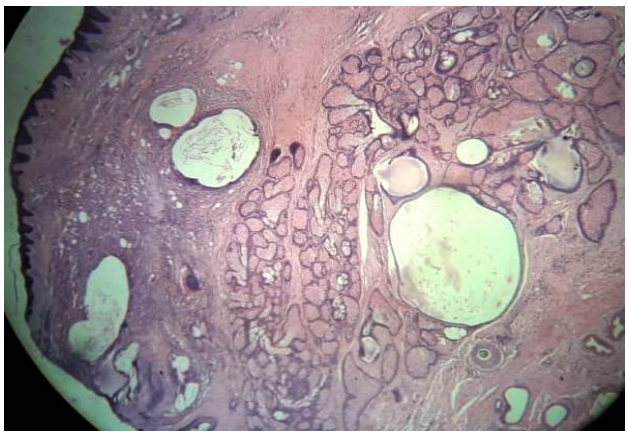

Figure 5: Sebaceous adenoma (H and E, scanner view).

In addition, 2 cases diagnosed clinically as sebaceoma and sebaceous adenoma turned out to be keratinous cyst

and dermatofibrosarcoma protuberans on histopathological examination. Sebaceous lesions were seen to be more frequent in females (5 cases) as opposed to males (4 cases).

DISCUSSION

The hallmark of all sebaceous lesions is the presence of sebocytes which contain many lipid-rich vacuoles in their cytoplasm. These may impinge upon the nucleus imparting a "scalloped" appearance.[8] If the biopsy is adequate and show typical features, immunohistochemistry is not necessary for diagnosis. Only in small or inadequate biopsies and in doubtful cases, immunohistochemistry may be of some use.

The distinction between sebaceous and non-sebaceous proliferations rests on the judgment of the pathologist taking into account cytologic features of sebaceous differentiation as well as architectural context.[8]

Sebaceous neoplasms are relatively rare adnexal neoplasms and can be subdivided into hamartomatous lesions (sebaceous hyperplasia and Nevus sebaceous, benign neoplasms, (sebaceous adenoma, sebaceoma, sebaceous epithelioma, superficial epithelioma with sebaceous differentiation, and malignant neoplasm (sebaceous carcinoma).[2] Besides, several other neoplasms may also show evidence of sebaceous differentiation.

In our study, we found 9 cases of sebaceous lesions which was quite less compared to the large number of cutaneous adnexal tumors diagnosed during this period. 55.6% of these lesions were benign and 44.4% were malignant. Higher percentage of benign tumours correlated with the studies by Dhume et al and Nair.[12,13]

Overall, sebaceous carcinoma was the most common lesion in our study followed by Nevus sebaceous. In the study by Dhume et al, nevus sebaceous was the most common lesion. The most common site of nevus sebaceous was head and neck region (100% of our cases) which is consistent with other studies.[14]

We had 3 cases of sebaceous carcinoma all of which were located in the eyelid. Histopathology showed irregular lobules of both basaloid and sebaceous cells, some of which showed atypia and mitosis. Comedo necrosis was seen in two of the cases.

The clinical diagnosis of sebaceous carcinoma may be missed, due to its rarity and also because it clinically simulates other eyelid lesions.[15,16] Chalazion and blepharoconjunctivitis are the most common misdiagnosis, with other benign and malignant tumors also causing clinical confusion. In our study, the most common diagnostic confusion clinically was squamous cell carcinoma.

The second most common lesion in our study, nevus sebaceus presented as scalp lesion. The tumor showed large number of sebaceous glands with papillomatous hyperplasia of the epidermis. We had one case of sebaceous adenoma which presented as a lower eyelid mass and was clinically diagnosed as a benign adnexal tumor. Histologically, it showed well differentiated sebaceous lobules with basaloid cells in the periphery.

CONCLUSION

In conclusion, sebaceous neoplasms were seen to be rarer in our population as compared to other adnexal tumors. Histopathology, in the presence of typical features, is the mainstay of diagnosis with immunohistochemistry aiding in certain doubtful cases.

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