

A CLINICOPATHOLOGICAL STUDY OF PERIOCCULAR SEBACEOUS GLAND CARCINOMA

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Abstract

Background: After basal cell carcinoma, sebaceous carcinoma of the ocular adnexa is the second most prevalent tumor in this anatomical region. The meibomian glands, the gland of Zeis, and the sebaceous gland of skin around the eyelids are the main sites of periocular sebaceous carcinoma, with the former being the most common. Sebaceous carcinoma two to three times more commonly occur in the upper eyelid. The goal is to use histopathological testing to diagnose sebaceous carcinoma in the periocular region while also researching different histological features and geographic considerations. **Materials and Methods:** At a tertiary eye care facility in Ahmadabad, Gujarat, India, 50 cases of periocular sebaceous carcinoma were retrospectively studied. The study, which took place between January 2017 and March 2023, concentrated on people whose histological examinations revealed they had periocular sebaceous carcinoma. **Result:** There were 50 patients in all who had SCs. The majority was male, with a mean age of 38 years. The most prevalent architecture in histological features is lobulated, with moderate differentiation being observed in 70% of instances. In all situations, advanced AJCC tumor stages are shown to have a substantial depth of invasion. **Conclusion:** Pathologists and physicians alike may find it difficult to diagnose sebaceous cancer. When it comes to both clinical and histological findings, sebaceous carcinoma is frequently misdiagnosed and treated improperly, resulting in delays.

INTRODUCTION

Sebaceous carcinoma of the ocular adnexa accounts for 5% of all malignant eyelid tumors and is the second most prevalent neoplasm in this anatomical location, after basal cell carcinoma.^[1] Sebaceous carcinomas can develop extraocularly or in the periocular region. Seventy-five percent of cases of sebaceous gland cancer occur in periocular areas.^[2] The meibomian glands, the glands of Zeis, and the sebaceous glands of the skin around the eyelids are the commonest sites of periocular sebaceous carcinoma, with the former being the most common. The upper eyelid is where sebaceous carcinomas form two to three times more frequently.^[3] Greater incidence of sebaceous gland carcinoma, the second most prevalent eyelid cancer, with highest reported rates of 39% and 37.5%, respectively, among the Asian population, which includes Chinese and Japanese people.^[4,5] SGC is uncommon in Caucasians, accounting for less than 1% to 5.5% of eyelid cancers; rates of 31.2% have been reported for the periocular region in the Indian population.^[6] The Asian population, advanced age, and female gender are risk factors. The average patient age at diagnosis

is between 57 and 72 years old.^[7] Pathological features of sebaceous carcinoma which predict poor prognostic outcome are multicentric origin, poor differentiation, high infiltrative pattern, vascular invasion, lymphatic invasion, and pagetoid invasion.^[8,9] The risk of local recurrence for sebaceous carcinoma is 30 to 40%, and the risk of distant metastases is up to 20%.^[10] For localized diseases, the 5-year survival rate is 78%, but for metastatic diseases, it is 50%.^[11] Sebaceous carcinoma can be misdiagnosed as benign or malignant tumors or as other inflammatory lesions. This can delay diagnosis and result in improper treatment, which increases the risk of morbidity and/or fatality.^[12]

MATERIALS AND METHODS

This retrospective investigation was carried out at B.J. on 50 cases of periocular sebaceous cancer. Ahmadabad, Gujarat, India: Medical College and Civil Hospital. The study, which took place between January 2017 and March 2023, concentrated on people whose histological examinations had proven they had periocular sebaceous carcinoma.

Histopathologically confirmed primary or recurrent sebaceous carcinoma and tumors with sufficient material are among the inclusion criteria. All tissue sections with poor preservation were disqualified from the investigation. Slides stained with hematoxylin and eosin (H&E) were made from tissue that had been paraffin-embedded and treated with formalin. Pathology slides and patient medical

records were chosen for retrieval and examination. The information gathered included information about the patient's age, gender, laterality, clinical presentation, and histopathological features, including differentiation, nuclear grade, depth of invasion, and page spread. The tumors were staged in accordance with the eighth edition of the AJCC. The findings are outlined below.

RESULTS

Table 1: Received number of biopsy and resection specimen

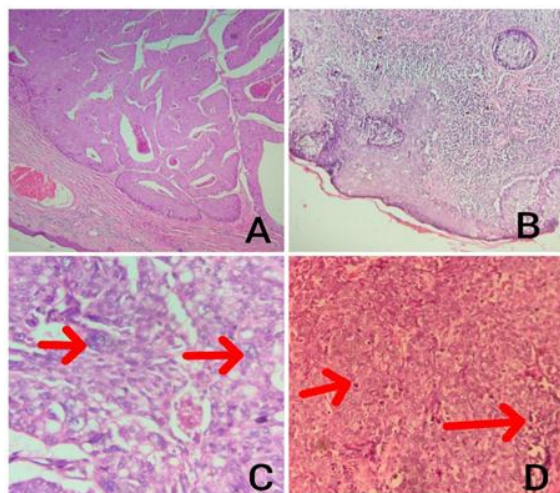
Wide resection	Biopsy	Total
13	37	50

Table 2: Geographic presentation

Clinical Features	N
Gender Ratio[M:F]	1.04:1
Age[Mean]	38

Table 3: Histopathological features

Pathological features	Number of Cases
Architecture [Most common-Lobulated> sheets]	32>18
Differentiation	
Well differentiated	
Moderately differentiated	35
Poorly differentiated	15
Nuclear grade	
Nuclear grade 1	4
Nuclear grade 2	36
Nuclear grade 3	10
Other features	
Pagetoid spread	16
Comedonecrosis	25
TNM stage	
T3N0M0	11
T2N0M0	32
T1N0M0	7
Tumor laterality[right>left]	26>24
Tumor location[upper lid>lower lid>both lid=medial canthus =lateral canthus]	31>16>1=1=1
T size [mean]	1.7[cm]
TNM stage correlation with Depth of invasion	
Stage	Depth of invasion [Mean]
T3N0M0	7.8 mm
T2N0M0	1.9 mm
T1N0M0	1.2 mm



(20X, H & E) C. red arrows show bizarre cells (40X, H&E) D. red arrows show atypical mitosis (40X, H&E)

Figure 1: A. shows malignant cells arranged in trabecular pattern (4X, H & E) B. shows pagetoid spread

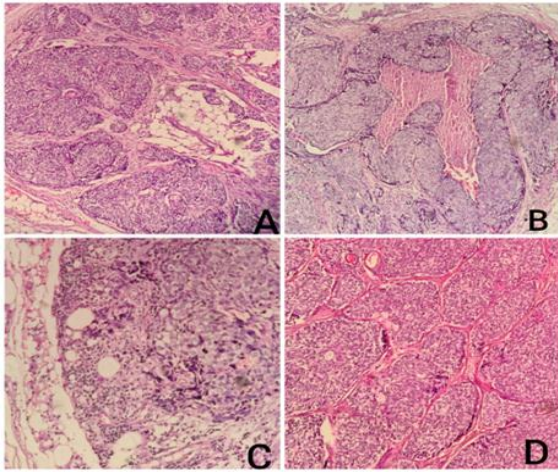


Figure 2: A. shows lobular pattern in SC with fat infiltration (10X,H&E) B. shows comedonecrosis (10X,H&E) C.show lymphocytic infiltration in SC(20X,H&E) D. show malignant cells arranged in lobular pattern (4X,H&E)

DISCUSSION

Because sebaceous carcinoma presents similarly to other benign and malignant lesions, it is extremely unusual for it to be recognized clinically. Moreover, identifying the sebaceous differentiation of tumor cells in histology is a challenging task.^[13] Other conditions to be considered while making a diagnosis include blepharitis, conjunctivitis, keratoconjunctivitis, basal cell carcinoma, squamous cell carcinoma, and other benign sebaceous neoplasms.^[14] Periocular sebaceous carcinoma typically presents as a yellow or pink, painless nodule. Carcinoembryonic antigen [CEA], EMA, androgen receptor, Ber-EP4, ADP (Adipophilin), CA15-3, and CA19-9 are among the antibodies that have been proposed as a panel to distinguish sebaceous carcinoma from basal cell carcinoma and squamous cell cancer. Recognizing the vacuolated pattern on EMA staining is the most crucial characteristic, even if SCC and BCC can also exhibit EMA. Usually, sebaceous tumors test negative for CEA. Every case that is suspected of being sebaceous gland carcinoma should have a biopsy, especially if there are symptoms such as recurrent chalazion, eyelid thickness, lash loss, lid eversion, or ulceration of the eyelid.^[15,16] Ber-EP4 reveals positive results in BCC but negative results in sebaceoma. According to Park SK et al., there appears to be a minor male predominance in ocular SC. A study by Yoon JS, In't Veld EH, et al. revealed a preponderance of females.^[17-19] The study conducted by 't Veld EH et al,^[19] indicated a median range of 45–95 years, which was in line with the mean affected age of 38 years identified in our investigation. According to Yoon JS et al,^[18] study, the upper eyelid was the most often damaged place in our investigation. Of the patients in our study, 52% had problems in their right eye and 48% in their left. According to the Burns SJ study, 44% of patients had right eye impairment and 56%

had left eye impairment, which is consistent with our findings.^[20] The American Joint Committee on Cancer's TNM classification,^[21] is used to determine the stage of sebaceous carcinoma based on its location. A retrospective cohort study of ocular sebaceous carcinoma has examined the link between TNM staging and disease progression. In ocular sebaceous carcinoma, a higher T category may indicate a higher risk of lymph node metastases or cancer-specific death.^[22] Patients with ocular sebaceous carcinoma in our study exhibited tumors at higher stages and deeper depths of invasion. Based on the degree of differentiation, sebaceous carcinomas can be divided into three groups: well-, moderately-, or poorly differentiated.^[23] Yoon JS discovered 41.7% of tumors to be poorly differentiated, which is consistent with our data, whereas roughly 30% of tumors were identified as such in our analysis. EH et al.'s study in 'Veld 19] r reported that 19% of cases were poorly discriminated against, which is inconsistent with our findings. The 't Veld EH study found that 60% of individuals lacked differentiation knowledge, which could account for the discrepancy. Lobular and sheets are the two most well-known histological patterns of infiltrative growth. The lobular pattern was the most prevalent pattern in our investigation; this finding is in line with the work of Park Sk et al.^[17] Within a single tumor, lobules can differ in size, and some lobulated tumors have comedonecrosis, or core necrosis. Rather than actual necrosis, this result is described as foci of hyperbolic holocrine secretion. According to histological analysis, 50% of the cases in our study had comedonecrosis, although Park SK et al,^[17] findings for 24% of the cases were in agreement with our findings. In line with Song A et al.'s findings, which were reported in 40% to 45% of patients, ocular lesions often exhibit a pagetoid pattern at the conjunctiva or epidermis of the eyelid. This feature was detected in 32% of all cases in our investigation. Since surgery is the gold standard for treating sebaceous carcinomas, a surgical margin of at least 5 mm is taken into consideration for periocular sebaceous carcinomas. Since the Mohs technique depends on contiguous growth, it is theoretically possible that a wider excision with 5 to 6 mm margins in all cases of sebaceous carcinomas could result in a higher cure rate. There are no established protocols for the surveillance of sebaceous carcinoma. As per a recent suggestion, after the first three years, follow up every six months and thereafter have yearly consultations.^[19]

CONCLUSION

For pathologists as well as ophthalmologists, the diagnosis of sebaceous carcinoma might be challenging. Due to its high recurrence rates, capacity for intraepithelial dissemination, and tendency to form local, regional, and distant metastases, sebaceous carcinoma should be considered a

possibility when making a differential diagnosis for an eyelid lesion. In both ophthalmologist and histological findings, SC is frequently misdiagnosed as an inflammatory illness or other malignancies, delaying appropriate treatment. Prompt diagnosis, which occasionally requires additional testing, and prompt treatment can lower morbidity and death rates in individuals with sebaceous carcinoma.

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