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Sebaceous cell carcinoma of ocular adnexa: report of six cases

Sunpetch Benjavongkulchai*

Petch Pisarnkorskul*

Vira Kasantikul*

Benjavongkulchai S, Pisarnkorskul P, Kasantikul V. Sebaceous cell carcinoma of ocular adnexa: report of six cases. Chula Med J 1989 Aug; 33(8) : 585-591

Six cases of sebaceous cell carcinoma are described. The tumors were more common in elderly women with a median age of 68.5 years. Solitary, painless, enlarging mass on the upper lid was the most common symptom. Direct invasion was frequently observed in this series. Histologically, there were two cases each of differentiated, squamoid, and basaloid variants. A fat stain on frozen section is recommended to confirm the diagnosis.

สรรเพชญ เบญจวงศ์กุลชัย, เพชร พิศาลก่อสกุล, วีระ กษานติกุล. คาร์ซิโนมาของเซลล์ต่อมไขมันของเปลือกตา : รายงาน 6 ราย. จุฬาลงกรณ์เวชสาร 2532 สิงหาคม; 33(8) : 585-591

ได้รายงานเนื้องอกร้ายแรงของเซลล์ต่อมไขมันของเปลือกตา จำนวน 6 ราย และมะเร็งชนิดนี้มักพบในหญิงอายุมาก โดยมีอายุเฉลี่ย (มัธยฐาน) 68.5 ปี ผู้ป่วยมักมีอาการของก้อนเนื้อไม่เจ็บที่เปลือกตาบน การดูกลามูสเนื้อเยื่อข้างเคียงพบได้บ่อย ลักษณะจุลพยาธิวิทยาพบว่ามะเร็งมีลักษณะ "คิฟเฟอร์เรนเซียน, สแควมอยด์และเบซาลอยด์อย่างละ 2 รายด้วยกัน การย้อมหาไขมันในขณะตัดด้วยเครื่องตัดเนื้อบางโดยอาศัยความเย็น จะช่วยในการวินิจฉัยโรค

Reprint Request : Benjavongkulchai S, Department of Pathology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

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* Department of Pathology, Faculty of Medicine, Chulalongkorn University.

** Department of Ophthalmology, Faculty of Medicine, Chulalongkorn University.

Sebaceous cell carcinoma is a rare tumor which may occur at any site⁽¹⁾ but has a distinct predilection for the eyelid.^(2,3) In Western countries, this lesion accounts for 1 to 3% of all malignant eyelid neoplasms, coming third in frequency to basal cell and squamous cell carcinoma.^(2,4) In China it ranks second to basal cell carcinoma.⁽²⁾ Although Meibomian gland is the most common site of origin, it may arise from the glands of Zeis, or hair follicles of the lid as well as those of the caruncle and eyebrow.^(5,6) Multicentricity has been occasionally reported.⁽⁷⁾ Clinically the lesion is frequently mistaken for a chalazion and chronic blepharoconjunctivitis when associated with pagetoid involvement of the conjunctiva, and may be incompletely remove.^(4,8,9) Pathologically it may be misdiagnosed as basal cell carcinoma and squamous cell carcinoma.⁽¹⁰⁾

Six cases of sebaceous cell carcinoma of eyelids are described here and the related medical literature is reviewed.

MATERIAL AND METHOD

Six cases of sebaceous cell carcinoma were obtained from the Department of Pathology over a 12-year period (1976 to 1988). Four cases have been previously presented.⁽¹¹⁾ All specimens were fixed in 10 per cent

formalin and embedded in paraffin. Sections were stained routinely with hematoxylin and eosin (H & E). The frozen sections of the fresh specimens were all stained with oil red O. The histologic typing followed Ni & Kuo classification. All clinical records were studied after review of the microscopic material.

RESULT

The neoplasm occurred in individuals aged between 31 to 87 years with a median age of 68.5 years. (Table) There were four women and two men. In three cases, the lesion was situated in the upper lid, in two was in the lower lid and in one in both lids. Left side was more frequently affected than the right at a ratio of 5:1. The length of illness ranged from 6 to 12 months. All patients presented with a painless enlarged mass of the eyelids. The associated symptoms included bilateral blindness and exophthalmos. Lymph node metastasis developed in one case. Orbital invasion, maxillary sinus and sphenoidal sinus involvement occurred in 4, 2, and 1 cases respectively.

Grossly, the tumor masses were found to be single nodules. (figure 1). They were yellow to grey-white and firm in consistency. The average size was 1.5 cm. in diameter. Periobital tissue invasion was seen in 4 cases.

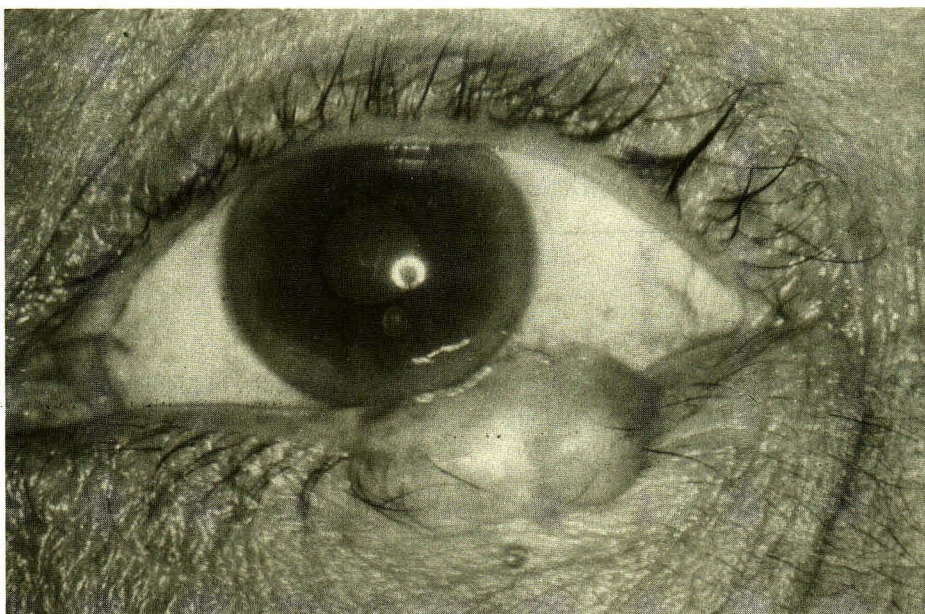


Figure 1. Gross illustration of a 1 × 0.5 cm, yellowish nodular mass, located at the medial 1/3 of the left lower lid (case 1).

Microscopically, the tumor cells exhibited distinct cytoplasmic border which stained basophilic to acidophilic. The nuclei were vesicular and contained prominent nucleoli. Cellular atypia and abnormal mitotic activity were diffusely seen. In the well-differentiated type, the malignant cells were arranged in acinar pattern, separated by thin delicate fibrous strands. (Fig 2 A, B) The degree of sebaceous differentiation with tumor necrosis was seen markedly in the central area. The squamoid type displayed squamous differentiation with keratin pearls, while the basaloid type was arranged in cord-like structure as seen in basal cell carcinoma (Fig 3 A, B). Infiltration of these malignant cells into the

surrounding structures was frequently seen. Oil red O staining of fresh frozen sections demonstrated lipid in the tumor cells (Fig 2C). Two cases each of differentiated type, squamoid type, and basaloid type were found in our series.

Treatment consisted of orbital exenteration following radiation therapy, 6,000 rads/6 weeks in two cases (case 2 and 3) enucleation (case 4 and 5), surgical excision of mass and transposition of tarsal plate (case 1), wide excision of lid and orbital mass following radiation therapy, 5,000 rads/5 weeks (case 6), and left maxillectomy (case 5). Recurrence was noted in two. Long term follow-up was not available.

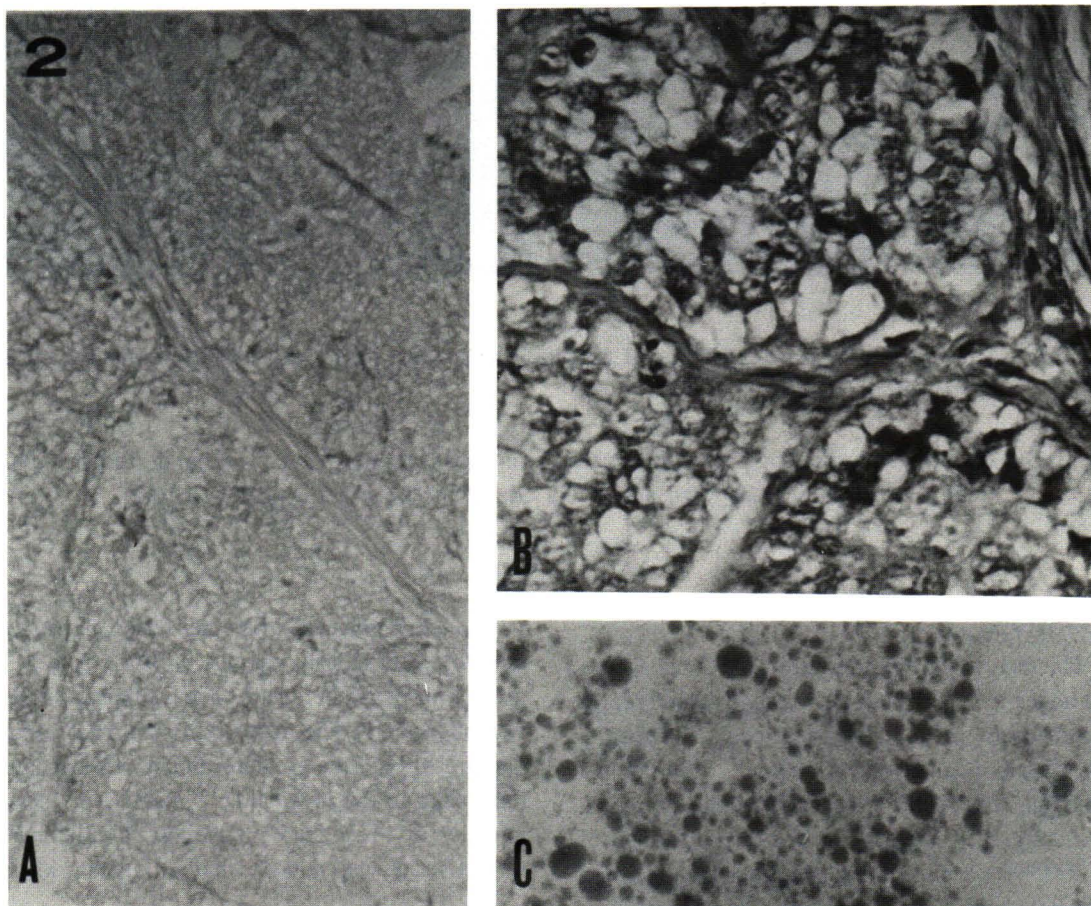


Figure 2. Differentiated type

- A.) Showing acinar pattern separated by thin delicate fibrous strands with well sebaceous differentiation (H&E $\times 100$).
- B.) Higher power view showing vacuolated neoplastic cells with sebaceous resemblance. (H&E $\times 400$)
- C.) Showing lipid droplets in the tumor cells. (Oil red O stain $\times 400$).

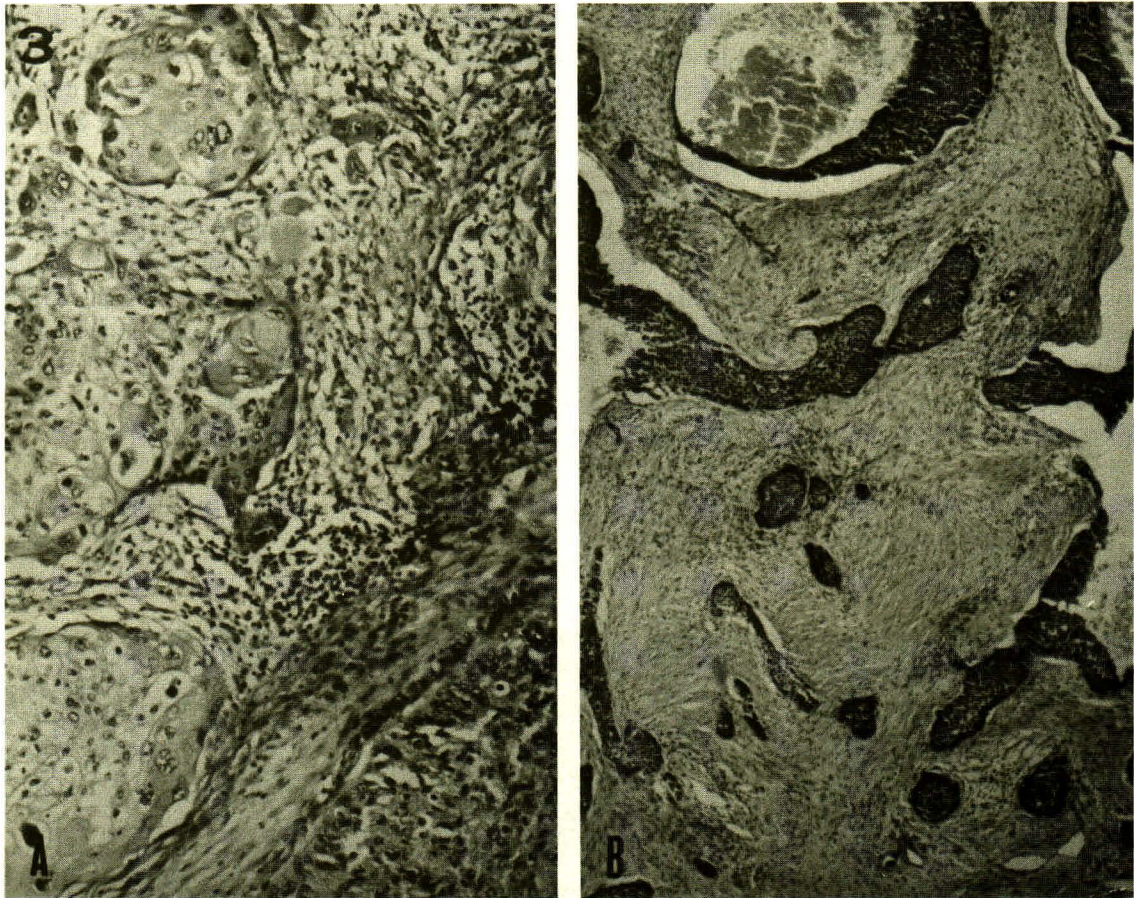


Figure 3. A Squamoid type showing groups of neoplastic cells with squamous cell differentiation and keratin pearls (H&E \times 200).

B Basaloid type showing packages of basophilic-stained neoplastic cells within desmoplastic tumor. Central necrosis demonstrated at the left side of the illustration (H&E \times 100).

DISCUSSION

Thiersch (1865) and Allaire (1891) have been quoted to be the first two authors to recognize and report cases of sebaceous cell carcinoma of ocular adnexa.⁽³⁾ The term, "Meibomian gland carcinoma", "Carcinoma of Meibomian gland", and "Sebaceous adenocarcinoma of Meibomian gland" were all named after its gland of origin.^(3, 12, 13) We decline to use this designation because it does not include lesions arising from Zeis gland or from other ocular adnexa. Furthermore the exact origin cannot be determined in several cases and the tumor may be multicentric.^(7, 14) Moreover some studies have demonstrated no biologic differences on the basis of the microscopic gland of origin.⁽⁴⁾ Thus we prefer to use a generic name of sebaceous cell carcinoma of ocular adnexa because it is specific to its histologic feature and organ involvement.

In agreement with other series, the tumors occur most often in elderly patients with a 1.5 to 2.75 times greater incidence in female. The median age in this series was 68.5 years. The upper lid is the most common site due probably to the greater number of sebaceous glands there than in the lower lid.⁽¹³⁾ Rarely this neoplasm is multicentric involving both eyelids.⁽⁷⁾ Only one example in this series was noted to have multicentric lesions.

Generally the tumor is often seen as a painless enlarging mass as observed in our patients. Frequently it produces a chalazion which may be the initial clinical manifestation.⁽⁹⁾ Symptoms of blindness and exophthalmos in our patients were due to the advanced stage of the tumor at the time of presentation.

Concerning the histopathologic findings, Rao et al have classified the lesion, based on the degree of

Summaries of Clinical and Pathological Findings

Case No.	Sex	Age	Location (yr.)	Duration (mon.)	Clinical presentation	Invasion / Metastasis	Treatment	Gross appearance	Histology typing
1	F	54	LL	7	A 1×0.5 cm mass at medial 1/3 of left lower eyelid with involvement of bulbar conjunctiva, without tenderness.	-	Excision of mass and trans-portion of tarsal plate	A yellowish nodule.	Differentiated
2	F	65	RU&RL	-	A 1.5 cm mass at right upper and lower lids	right neck node orbit wall and maxillary sinus	Exenteration & XRT 6,000 rads/6 weeks	An irregular hard nodule.	Squamoid
3	F	87	LU	12	A 3×1.5×2 cm mass recurrent, with mild tenderness.	orbit wall and maxillary sinus	Exenteration & XRT 6,000 rads/6 weeks	A yellowish multinodular hard mass.	Squamoid
4	M	73	LL	-	Bilateral blindness, Mass at LL.(medial side)	left orbit wall	Enucleation	A grey-white mass,4×3×2cm.	Basaloid
5	M	72	LU	-	Recurrent sebaceous carcinoma of eyelid with progressive enlargement.	left orbit left maxillar and sphenoid sinus	Enucleation, Left maxillectomy	6×3×2cm mass invading periorbital tissue.	Differentiated
6	F	31	LU	6	Mass at left upper lid with exophthalmos.	left orbit wall	Wide excision of lid and orbital mass & XRT 5,000 rads/5 weeks	Irregular mass, 3.5 cm. in diameter.	Basaloid

F = Female ; M = Male ; LL = Left lower lid ; LU = Left upper lid ; RU = Right upper lid ; RL = Right lower lid

sebaceous differentiation.⁽¹⁴⁾ However the histologic features of the tumor are extremely variable and may be mistaken pathologically as basal cell carcinoma and squamous cell carcinoma. Ni and Kuo have subdivided this tumor into 5 histologic variants including differentiated, squamous, basaloid, adenoid, and spindle cell types.⁽¹⁵⁾ The authors have indicated that the squamoid and basaloid lesions were more malignant than the differentiated type, while the adenoid and spindle cell types were too few to establish their aggressive behavior. Our study encountered only 2 cases each of differentiated, squamoid, and basaloid lesions. Local invasion and node metastasis were noted in 5 cases. These findings confirm the highly aggressiveness of this tumor, although the number was small.

Several authors have observed the microscopic intraepithelial pagetoid spread of the tumor cells as important findings which may provide an early diagnosis

and distinguish the condition from other malignant neoplasms.^(10,14,16) Furthermore pagetoid invasion may be associated with a high fatal outcome as reported by Rao et al.⁽¹⁴⁾ The finding of such histologic feature has ranged from 16% to 80% of cases.^(4,14,16) However pagetoid invasion was not found in our series which may have been due to either the small number of cases or the misampling of the skin specimen. The full thickness eyelid biopsy thus is essential in cases of biopsy diagnosis as carcinoma in situ of the conjunctiva because it may represent pagetoid spread of an occult sebaceous cell carcinoma.⁽¹⁸⁾ Additionally a fat stain on a frozen section is an important diagnostic tool necessary to determine the nature of tumor as noted in our study and in other series.⁽⁴⁾

The etiology of the tumor is not known. The disease can be seen following radiation⁽¹⁹⁾ organic substances such as unsaturated fatty acid and exposure to⁽²⁾

and benzene derivatives.⁽¹²⁾ Although racial and geographic factors may not be important factors in some series^(3,17) a high number of cases have been reported in the Oriental population particularly in the Chinese and Indonesians.^(12,15) This tumor however is rare in Thailand.

The neoplasm should be treated promptly after early clinical recognition and pathologic confirmation. Frozen section of the surgical margins should be performed upon resection of the localized tumors.⁽¹⁶⁾ Orbital exenteration is usually performed if the tumor extends into the orbits. Radical neck dissection is indicated when

the cervical or preauricular nodes are involved.⁽¹⁴⁾ Radiation therapy may be useful in some instances particularly in high surgical risk patients.⁽¹⁶⁾ It can also be used as adjunct to surgical exenteration. Despite therapy, a mortality rate as high as 30 to 41 % has been reported in some series.^(5,2)

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