Histopathological Diagnosis of Eyelid Tumors in Chiang Mai University Hospital

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Objective: *To report the histopathological diagnosis of eyelid tumors and to study the prevalence of eyelid tumors in Chiang Mai University Hospital, Chiang Mai, Thailand.*
Material and Method: *A retrospective review of medical and pathological records of patients diagnosed as eyelid tumor that underwent histopathological biopsy between January 2007 and December 2013 in Chiang Mai University Hospital was done.*
Results: *Three hundred sixteen cases of eyelid tumors were reviewed. The mean age at diagnosis was 54.2±19.6 years (range 1 month-99 years), women were 59.5% (n = 188) and men 40.5% (n = 128). The tumor sites were left lower eyelid (27.5%), right upper eyelid (24.4%), right lower eyelid (21.2%), and left upper eyelid (18.7%). There were 204 (64.6%) benign tumors and 112 (35.4%) malignant tumors. Nevi were the most common in benign group (16.4%) and basal cell carcinoma was the most common eyelid malignancy (18.0%).*
Conclusion: *The most common histopathological diagnosis for benign eyelid tumor was nevus, while the most common malignant eyelid tumor was basal cell carcinoma at Chiang Mai University Hospital.*

Keywords: *Histopathological diagnosis, Eyelid tumors, Prevalence of eyelid tumors*

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In clinical ophthalmologic practice, eyelid tumors, which may be benign or malignant, are commonly encountered[1]. Since malignant eyelid tumors are rare, it is difficult to make the correct diagnosis and manage them appropriately. They can be misdiagnosed as benign and cause cosmetic or functional disorders of eyelid or distant metastases[2]. Histopathological diagnosis from tissue biopsy must be done for the correct diagnosis. In western countries, basal cell carcinoma is the most common among malignant eyelid tumors, whereas in Japan and other parts of Asia, the frequency of sebaceous gland carcinoma and squamous cell carcinoma are relatively high[2]. A previous study in a tertiary center hospital in Thailand showed that the majority of eyelid lesions were benign tumors, while malignant eyelid tumor contributed to only 10.8% of the total[3]. Sebaceous cell carcinoma was the most common malignant eyelid tumor found[3]. The pattern and frequency of eyelid tumors may depend on geographic distribution[4]. The prevalence of benign and malignant eyelid tumors in the northern Thailand is important for clinical management and health care planning. The present study aimed to determine histopathological diagnosis and the prevalence of eyelid tumors.

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Material and Method

The authors obtained approval of the study protocol from the Ethic Committee of the Faculty of Medicine, Chiang Mai University. We retrospectively reviewed medical and pathological records of patients diagnosed as eyelid tumors that underwent eyelid biopsies in Chiang Mai University Hospital, Thailand, between January 1, 2007 and December 31, 2011. Only patients with histopathological confirmed diagnosis were included. Data collected included age, gender, histopathological diagnosis, and location of eyelid tumors.

Statistical analysis was performed using SPSS software version 16.0. Chi-square test of proportion was used to evaluate the correlation of variation.

Results

Three hundred sixteen cases (316 eyes) of eyelid tumors diagnosed were identified. Demographic

Table 1. Demographic data of eyelid tumors in Chiang Mai University Hospital

Demographic data	No. of eyes (n = 316)
Age (years) (mean ± SD)	54.2±19.6
Gender	
Male	128 (40.5%)
Female	188 (59.5%)
Distribution of eyelid tumor	
Right upper eyelid	77 (24.4%)
Right lower eyelid	67 (21.2%)
Left upper eyelid	59 (18.7%)
Left lower eyelid	87 (27.5%)
Unspecified site	26 (8.2%)

data were 128 cases (40.5%) male and 188 cases (59.5%) female. All of the patients were Thai ethnicity. The mean age at diagnosis was 54.2 years, ranged from 1 month to 99 years (Table 1). Histopathological diagnosis of these tumors is shown in Table 2.

Of the 316 cases, 204 cases (64.6%) accounted for benign tumors and 112 cases (35.4%) for malignant. Benign eyelid tumors commonly found were nevi (n = 52, 16.4%), the intradermal nevi were mostly found in subgroup, seborrheic keratosis (n = 32, 10.1%), and epidermal inclusion cyst (n = 18, 5.7%). The most common malignant eyelid tumors were basal cell carcinoma (n = 57, 18.0%), squamous cell carcinoma (n = 20, 6.3%), and sebaceous cell carcinoma (n = 14, 4.4%). When the correlation of distribution of eyelid tumors, benign and malignant was evaluated, there was statistical significance in right upper eyelid (p<0.001, left upper eyelid (p<0.001), and unspecified group (p = 0.002) (Table 3).

Discussion

The present retrospective descriptive study showed the majority of eyelid tumors were benign. Most common benign eyelid tumor was nevi whereas the most common malignant eyelid tumor was basal cell carcinoma.

Previous study in a tertiary hospital in Thailand, Pornpanich et al[3] collected data of 212 cases, of which 71.4% were benign and 10.8% were malignant. When compared to the present study, relative prevalence in benign and malignant group was quite similar, but we found a higher percentage in malignancy group (35.4%). This may be caused by the delay in seeking treatment in this area, and the lower cosmetic concern. Low socioeconomic status and travelling difficulty among northern mountain

Table 2. Histopathological diagnosis

Diagnosis (n = 316)	Frequency (eyes)	Percent (%)
Basal cell carcinoma	57	18.0
Nevus	52	16.4
Intradermal nevus	38	12.0
Compound nevus	11	3.5
Epidermal nevus	1	0.3
Subepithelial nevus	2	0.6
Seborrheic keratosis	32	10.1
Squamous cell carcinoma	20	6.3
Epidermal inclusion cyst	18	5.7
Sebaceous carcinoma	14	4.4
Non-specific inflammation	14	4.4
Verruca vulgaris	13	4.1
Squamous papilloma	9	2.8
Dermoid cyst	8	2.5
Fibroepithelial polyp	8	2.5
Chalazion	6	1.9
Lymphoma		
Diffuse large B cell	5	1.6
Extranodal marginal zone B-cell	3	0.9
Low graded B cell	2	0.6
Extranodal NK/T cell	1	0.3
Neurofibroma	4	1.3
Malignant melanoma	3	0.9
Actinic keratosis	3	0.9
Arteriovenous malformation	3	0.9
Capillary hemangioma	3	0.9
Atypical lymphoid hyperplasia	3	0.9
Benign cyst	3	0.9
Amyloid deposit	2	0.6
Pilomatricoma	2	0.6
Xanthelasma	2	0.6
Others*	21	6.6

* Others: adenocarcinoma,benign mixed tumor (pleomorphic carcinoma), cavernous hemangioma, eccrine spiradenoma, fibrous histiocytoma, hemorrhagic adenoma (mixed tumor), intraosteous osteosarcoma (well differentiated), inverted follicular keratosis, juvenile xanthogranuloma, kaposi sarcoma, keratoacanthoma, malignant small round cell tumor (malignant rhabdoid tumor), mature cystic teratoma, mucoepidemoid carcinoma, nodular hidradenoma, poorly differentiated carcinoma with neuroendocrine features involving dermis, poorly differentiated squamous cell carcinoma and basal cell carcinoma, pseudoinflammatory tumor, scar, sebaceous gland hyperplasia, trichofolliculoma (each of these contained 1 frequency, 0.3%)

Table 3. Correlation between distribution of eyelid tumors and benign/malignant eyelid tumors

Distribution of eyelid tumors	Benign eyelid tumors (n = 204)	Malignant eyelid tumors (n = 112)	Total cases (n = 316)	*p*-value
RUL	57 (27.9%)	20 (17.9%)	77	<0.001
RLL	34 (16.7%)	33 (29.5%)	67	0.903
LUL	48 (23.5%)	11 (9.8%)	59	<0.001
LLL	44 (21.6%)	43 (38.4%)	87	0.915
Unspecified site	21 (5.3%)	5 (4.5%)	26	0.002

RUL = right upper eyelid; RLL = right lower eyelid; LUL = left upper eyelid; LLL = left lower eyelid

areas could be the causes. The most common malignant eyelid tumor was also different. Pornpanich et al[3] found sebaceous cell carcinoma most prevalent, while in the present study, we found basal cell carcinoma being more prevalent.

In literature review of other studies in Asian countries, Lin et al[1] showed basal cell carcinoma dominated the incidence trends (65.1%) of 1,166 cases in a 21-year review of the incidence of eyelid cancers in Taiwan. In the present study, we found 50.9% of basal cell carcinoma in malignant group. Mak et al[5] showed basal cell carcinoma was mostly found for 75% of 36 cases in Hong Kong between 1997 and 2009, which is consistent with a Japanese study from Takamura and Yamashita[2], who reported that the frequency of basal cell carcinoma was 39.5%, followed by sebaceous cell carcinoma 28.9% among 38 cases. However, Sihota et al[7] reported in 1996 that sebaceous cell carcinoma was the most common malignant tumor found in Indian population.

In Caucasians, Cook et al[6] showed that the most common malignant eyelid tumor was basal cell carcinoma (90.8%) in 174 patients. The lower eyelid and medial canthus were the most frequent sites of origin. Therefore, the different prevalence among Asians and Caucasians may be caused by genetics and racial predisposition.

The most common site of malignant eyelid tumors in the present study was lower eyelid (63.8%), which is consistent with other studies[7,8], whereas in benign group, it showed no difference. Most of the cases from literature review were treated with wide excision. Recurrences cases were reevaluated and redone with wide excision or enucleation or orbital exenteration. Radiation and chemotherapy were the other treatment of choice after surgery.

In summary, the 5-years retrospective descriptive review in Chiang Mai University Hospital, Thailand between 2007 and 2011 showed that benign eyelid tumors were more common than malignant (67.8% versus 27.6%). Most of the benign eyelid tumors were nevi, while the malignant were basal cell carcinoma. Malignant eyelid tumor is a life-threatening condition so awareness of clinicians is very important. Education and prevention programs should be encouraged to increase public awareness of this disease.

What is already known on this topic?

1) Prevalence of eyelid tumors in tertiary hospital in Thailand. 2) Prevalence of malignant eyelid tumor in Asian countries.

What this study adds?

1) Prevalence of eyelid tumors in tertiary hospital recently (2007-2011). 2) Histopathological diagnosis that give more accurately diagnosis. 3) Different most common malignant histopathological diagnosis. 4) More cases of eyelid tumors than previous study in Thailand.

Potential conflicts of interest

None.

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การวินิจฉัยทางจุลพยาธิวิทยาของผู้ป่วยเนื้องอกที่เปลือกตาในโรงพยาบาลมหาราชนครเชียงใหม่

ชนัฐ นิธิธนภัทร, ศักรินทร์ อัษญคุณ, ดำรงค์ วิวัฒน์วงศ์วนา, พงษ์ศักดิ์ มหานุภาพ

วัตถุประสงค์: *เพื่อศึกษาความชุกของเนื้องอกที่เปลือกตาที่ได้รับการวินิจฉัยทางจุลพยาธิวิทยาในโรงพยาบาลมหาราชนครเชียงใหม่*
วัสดุและวิธีการ: *การศึกษาย้อนหลังเวชระเบียนทั่วไปและเวชระเบียนทางพยาธิวิทยาในผู้ป่วยที่ได้รับการวินิจฉัยว่ามีเนื้องอกที่เปลือกตา และได้รับการตรวจชิ้นเนื้อทางจุลพยาธิวิทยาในช่วงเวลาตั้งแต่ เดือนมกราคม พ.ศ. 2550 ถึง ธันวาคม พ.ศ. 2554 ในโรงพยาบาลมหาราชนครเชียงใหม่*
ผลการศึกษา: *พบว่ามีจำนวนตาที่ได้รับการวินิจฉัยว่ามีเนื้องอกที่เปลือกตาทั้งหมด 316 ตา โดยพบว่าผู้ป่วยมีอายุเฉลี่ย 54.2±19.6 ปี (ช่วงอายุตั้งแต่ 1 เดือน ถึง 99 ปี) แบ่งเป็นเพศหญิง 59.5% (188 ราย) และเพศชาย 40.5% (128 ราย) ตำแหน่งที่พบว่ามีเนื้องอกที่เปลือกตามากที่สุดที่เปลือกตาล่างซ้าย 27.5% ต่อมาเป็นเปลือกตาบนขวา 24.4% เปลือกตาขวาล่าง 21.2% และเปลือกตาบนซ้าย 18.7% ตามลำดับ การศึกษาพบกลุ่มเนื้องอกที่เปลือกตาชนิดไม่ร้ายแรง 64.6% (204 ตา) และกลุ่มเนื้องอกที่เปลือกตาชนิดร้ายแรง 35.4% (112 ตา) นอกจากนี้ในกลุ่มเนื้องอกที่เปลือกตาชนิดร้ายแรงพบว่า basal cell carcinoma เป็นโรคที่พบมากที่สุดถึง 18.0% ส่วนกลุ่มเนื้องอกที่เปลือกตาชนิดไม่ร้ายแรงพบว่า nevus พบได้มากที่สุดเท่ากับ 16.4%*
สรุป: *การศึกษาทางจุลพยาธิวิทยาเกี่ยวกับเนื้องอกที่เปลือกตาในโรงพยาบาลมหาราชนครเชียงใหม่ พบว่า nevus เป็นโรคที่พบบ่อยที่สุดในกลุ่มเนื้องอกที่เปลือกตาชนิดไม่ร้ายแรง และ basal cell carcinoma พบบ่อยที่สุดในกลุ่มเนื้องอกที่เปลือกตาชนิดร้ายแรง*