

Prevalence of eyelid diseases among adults in Hong Kong

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Abstract

Introduction: Eyelid diseases affect visual function and quality of life. This is the first study to investigate the prevalence of eyelid diseases among the general population in Hong Kong.

Methods: On 22 October 2017, The College of Ophthalmologists of Hong Kong and The Hong Kong Ophthalmological Society jointly organized a Public Education Day. A total of 165 participants were recruited for eyelid disease screening. Eyelid examination was performed by ophthalmology residents under the supervision of a specialist subspecializing in oculoplastics to identify any eyelid diseases (dermatochalasis, ptosis, entropion, ectropion, lash misdirection, presence of eyelid masses, and blepharitis). The prevalence of these eyelid diseases and their association with age and sex were determined.

Results: The 165 participants (122 females and 43 males) were all Chinese and were aged 24 to 92 (mean, 68) years; 23.6% were <60 years old, 62.4% were 60–80 years old, and 13.9% were >80 years old. The most common eyelid disease was dermatochalasis, with a prevalence of 61.8%, followed by blepharitis (32.1%), ptosis (7.3%), and eyelid mass (6.7%). Lash misdirection, entropion, and ectropion were uncommon, with a prevalence of 2.4%, 0.6%, and 0%, respectively. Dermatochalasis was more common with increasing age. Other eyelid diseases did not correlate with age.

Conclusion: Eyelid diseases are not uncommon among

the general population in Hong Kong, particularly dermatochalasis, ptosis, and blepharitis. Eyelid diseases may negatively impact patients functionally and psychosocially. Clinicians and the general public should be aware of these eyelid diseases.

Key words: Blepharitis; Ectropion; Entropion; Eyelid diseases; Eyelid neoplasms

Introduction

Common eyelid diseases include dermatochalasis, ptosis, entropion, ectropion, lash misdirection, presence of eyelid masses, and blepharitis (**Figures 1 and 2**). Eyelid diseases may affect visual function and quality of life. Correction of eyelid diseases significantly improves vision-related quality of life.^{1–4}

In Australia, the Blue Mountains Eye Study reported that 3.9% of the study population had ectropion.⁵ In Brazil, the prevalence of involutional entropion and ectropion in the elderly population was 2.1% and 2.9%, respectively.⁶ In Manchester, England, the prevalence of ptosis was as high as 11.5% in the aged population. Similar studies have not been conducted in Hong Kong.

Many eyelid diseases are involutional in nature. The prevalence of eyelid diseases increases in an ageing population. This may increase the public healthcare burden. This study aimed to determine the prevalence of eyelid diseases among the adult population in Hong Kong, and to determine the association of eyelid diseases with age and sex.

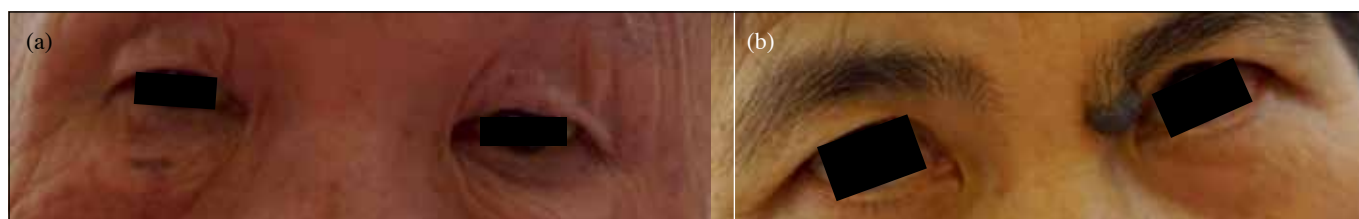


Figure 1. Clinical photographs showing (a) bilateral upper eyelid dermatochalasis and (b) a mass on the left upper eyelid.

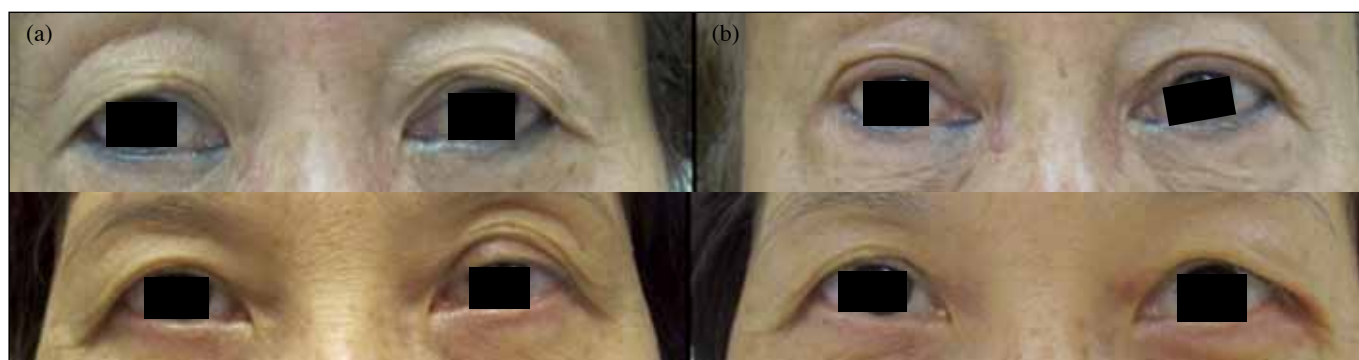


Figure 2. Clinical photographs before and after (a) blepharoplasty and (b) ptosis correction.

Methods

This cross-sectional study was approved by the Kowloon Central / Kowloon East Cluster Research Ethics Committee of the Hospital Authority (ref: KC/KE-18-0153-ER-4). On 22 October 2017, The College of Ophthalmologists of Hong Kong and The Hong Kong Ophthalmological Society jointly organized a Public Education Day (comprising health talks and eyelid disease screening) in a shopping mall in Tsuen Wan, New Territories, Hong Kong. A total of 165 participants were recruited for eyelid disease screening; about half were through the Hong Kong Association of Senior Citizens and the remaining by phone upon reading a recruitment advertisement in the Sky Post, a free newspaper. There was no age limit or sex restriction to participation.

Eyelid examination was performed by ophthalmology residents under the supervision of a specialist subspecializing in oculoplastics to identify any eyelid diseases (dermatochalasis, ptosis, entropion, ectropion, lash misdirection, presence of eyelid masses, and blepharitis). Dermatochalasis was defined as excessive eyelid skin on the upper eyelid hanging over the eyelashes.⁷ Ptosis was defined as eyes with palpebral fissure height of <9 mm, or ≥ 2 mm difference between two eyelids.⁸ Ectropion was defined as everted lower eyelid, whereas entropion as inverted eyelids. Lash misdirection can occur diffusely across the entire lid or in a small segmental distribution. Eyelid masses can occur anywhere in the upper or lower eyelids. Blepharitis was characterized by chronic inflammation of the eyelid, usually at the base of the eyelashes, with inflamed and reddened eyelids.

The prevalence of these eyelid diseases was determined. Association of these eyelid diseases with age and sex was determined using Chi-squared test. Statistical analysis was performed using the Statistical Package for the Social Sciences version 18.0 (SPSS, Chicago [IL], USA). A p value of <0.05 was considered statistically significant.

Results

The 165 participants (122 females and 43 males) were all Chinese and were aged 24 to 92 (mean, 68; standard deviation, 13) years; 23.6% were <60 years old, 62.4% were 60-80 years old, and 13.9% were >80 years old (Table).

The most common eyelid disease was dermatochalasis, with a prevalence of 61.8% ($n=102$). It occurred more commonly with increasing age, with prevalence of 25.6%, 71.8%, and 78.3% in the age-groups of <60 years, 60-80 years, and >80 years, respectively ($p<0.001$). The prevalence was comparable in males and females (58.1% vs. 63.1%, $p=0.56$).

Blepharitis was identified in 53 participants, giving a prevalence of 32.1%. The prevalence was not associated with age: 25.6%, 37.9%, and 17.4%, in the age-groups of <60 years, 60-80 years, and >80 years, respectively ($p=0.10$), and was comparable in males and females (34.9% vs. 31.1%, $p=0.65$).

Ptosis was identified in 12 participants, giving a prevalence of 7.3%. It occurred more commonly in males than females (18.6% vs. 3.3%, $p=0.01$). It occurred most commonly in

Table. Prevalence of eyelid diseases in the study population							
Parameter	Prevalence (%)						
	Dermatochalasis	Ptosis	Entropion	Ectropion	Lash misdirection	Eyelid mass	Blepharitis
Overall (n=165)	61.8	7.3	0.6	0	2.4	6.7	32.1
Sex							
Male (n=43)	58.1	18.6	0	0	2.3	9.3	34.9
Female (n=122)	63.1	3.3	0.8	0	2.5	5.7	31.1
Age-group, y							
<60 (n=39)	25.6	10.3	0	0	5.1	7.7	25.6
60-80 (n=103)	71.8	5.8	1.0	0	1.0	4.9	37.9
>80 (n=23)	78.3	8.7	0	0	4.3	13.0	17.4

those aged <60 years (10.3%), followed by those aged >80 years (8.7%) and 60-80 years (5.8%) [$p=0.64$].

Eyelid masses were identified in 11 participants, giving a prevalence of 6.7%. They occurred most commonly in those aged >80 years (13.0%), followed by those aged <60 years (7.7%) and 60-80 years (4.9%) [$p=0.34$]. The prevalence in males and females was 9.3% and 5.7%, respectively ($p=0.42$).

Lash misdirection, entropion, and ectropion were uncommon, with a prevalence of 2.4%, 0.6%, and 0%, respectively.

Discussion

In our study, the prevalence of dermatochalasis was 61.8%, which is higher than the 17.8% reported in a Rotterdam study of 5578 people.⁹ Dermatochalasis occurred more commonly with increasing age and is a feature of the aging process of the skin.¹⁰ Male sex is a risk factor.⁷ In our study, the prevalence of dermatochalasis was similar between males and females (58.1% vs 63.1%, $p=0.56$).

Dermatochalasis and ptosis have a negative impact on function and psychosociology.^{11,12} Functionally, patients may experience superior visual field loss, impaired reading and other close-work ability owing to down-gaze ptosis, a chin-up backward head tilt owing to visual axis obscuration, symptoms of discomfort or eye strain owing to droopy lids, and in severe cases, interference with central visual owing to upper eyelid position.¹¹ Psychosocially, patients with blepharoptosis or dermatochalasis are viewed negatively.¹² Ptosis correction and blepharoplasty significantly improve vision-related quality of life,¹⁻⁴ with good functional and cosmetic outcome.

In our study, the prevalence of dermatochalasis and ptosis was 61.8% and 7.3%, respectively. The conditions may be undiagnosed in a large proportion of the population. Clinicians should proactively identify such patients and refer them to an ophthalmologist for further management. In

our study, the prevalence of eyelid mass was 6.7%. Eyelid masses can be benign or malignant. In a review from Korea, approximately 36% of all eyelid tumors were malignant.¹³ The incidence of malignant eyelid tumors has increased worldwide.¹⁴⁻¹⁶ This trend was also reported in a local study, with the incidence increased from 0.6 per million people in 1997 to 2.3 per million people in 2009.¹⁷ Biopsy should be performed to confirm the nature of the lesions. In our study, the prevalence of blepharitis was 32.1%. In a Korean study of the epidemiology of blepharitis in a large population-based sample, the prevalence was 8.1% among subjects aged ≥ 40 years.¹⁸ Although blepharitis is often self-limiting, it can be severe or chronic and leads to lid malposition such as ectropion, keratitis, or corneal ulceration with consequent vision loss.¹⁹ A Taiwan study reported that patients with blepharitis were at higher risk of developing anxiety and depression.²⁰ Blepharitis is associated with dysfunctional tear production or dry eyes and meibomian gland dysfunction. Ophthalmologist awareness of such conditions has increased since the publication of diagnosis and treatment guidelines for such disorders.²¹ Clinical improvement can be achieved with simple measures such as cleaning the lid with diluted baby shampoo.²² Other effective treatments include tear supplements and lubricants, various types of drugs, and nutritional supplements.²¹ Given the high prevalence of blepharitis among the local population, more education should be provided to enable early identification of the disease to prevent possible complications and reduce the public healthcare burden.

Eyelid diseases can also affect other parts of the eye and body. For instance, untreated entropion can cause corneal abrasion, microbial keratitis, corneal vascularization, and subsequently vision loss.²³ Trachoma may cause lash misdirection and remains a leading infectious cause of blindness according to the World Health Organization.²⁴ Malignant eyelid masses, apart from being locally invasive, may result in lymph node metastasis, systemic metastasis, and even death.²⁵ These examples highlight the importance of eyelid health. Clinicians should refer patients with eyelid diseases to ophthalmologists for further assessment. Patients with complicated eyelid diseases should be managed by

oculoplastic subspecialists who are dedicated to eyelid, lacrimal, and orbital care.²⁶

Our study has limitations. Recruitment of participants for screening was non-randomized, and hence there may have been selection bias. All participants were Chinese and therefore the results may not be directly comparable or applicable to other ethnic populations.

Conclusion

Eyelid diseases are not uncommon among the general population in Hong Kong, particularly dermatochalasis, ptosis, and blepharitis. Eyelid diseases may negatively impact patients functionally and psychosocially. Both

clinicians and the general public should be aware of these eyelid diseases.

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Declaration

The authors have no conflicts of interest to disclose.

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