The Prevalence of Demodex Folliculorum on Eyelashes of Symptomatic and Asymptomatic Normal Patients

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The Prevalence of Demodex Folliculorum on Eyelashes of Symptomatic and Asymptomatic Normal Patients

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INTRODUCTION

Demodex Folliculorum (DF) is the most common ectoparasite found in human skin and eyelashes 1,2. They are ordinarily found on the upper eyelid, cheek, nose, chin and eyelashes 3. Ocular symptoms of DF infestation include itching, dryness, surface irritation, burning, foreign body sensation, photophobia and reduced vision 4,5. The human body plays host to two types of Demodex, DF and Demodex Bravisi (DB). DF is approximately 0.4 mm in length and resides in the hair follicles. DB is slightly smaller (approximately 0.2 mm) and is generally found in the sebaceous glands 6. Adult DF and DB have a head with four pairs of legs attached, and a long body-tail 7,8 (Figure 1). Their main food source comprises of sebum and epidermal cells 9. DF is most active at night, when male DF travels across the skin in search of a mate, moving 16-mm/hr. Female DF lay eggs in the base of the eyelash and sebaceous glands. The lifecycle of DF is approximately 14-18 days 10,11.

The incidence of DF increases with age and skin conditions such as acne rosacea 10,12. DF has been observed in 25% of patients at age 20, 84% of patients at age 60 and 100% of patients over the age of 70 10.

Figure 1: Detail of Demodex Folliculorum, multiple mites found on one eyelash

OBJECTIVE

To examine the prevalence of DF on the eyelashes of symptomatic and asymptomatic patients in a normal clinical setting.

METHODS

Students and patients of the National Optometry Centre (n = 100 eyes), aged 19 – 78 years were assessed and sub-divided into 4 groups: Group (1) No signs or symptoms (n = 13), Group (2) signs only, no symptoms (n = 51), Group (3) symptoms only, no signs (n = 26) and Group (4) signs and symptoms (n = 56).

Each subject completed a novel DF questionnaire on oculary symptoms and lifestyle. habitual distance visual acuity was assessed and a slit lamp examination was conducted. 8 lashes – 2 from each eyelid were manipulated and epithelated for microscopic examination. Adult DF count was recorded using the modified Coston method 2.

RESULT

A one-way ANOVA was used to analyse the prevalence of DF seen on eyelashes of symptomatic and asymptomatic patients.

METHODS

Figure 2: Cylindrical dandruff visible as cuffs at the base of the eyelashes.

RESULTS

Figure 3: Shows the distribution of Demodex counted across the different categories and the ages of the subjects in each category.

CONCLUSION

DF was found on 61% of eyes tested in the study. Of those 8%, 6% were asymptomatic. 30% of eyes were found to have no DF, yet 66.6% of these patients were symptomatic. Not all patients with symptoms will have DF, and DF can still be found in asymptomatic individuals, but most patients with DF will have symptoms or signs seen on slit lamp evaluation.

There are significant relationships between the presence and number of DF with age, contact lens wear and frequency of cleaning pillow cases but the latter results are significantly influenced by the age of the subjects. The average age of subjects cleaning bed linen = once a month is 24 years in comparison to 45 years for those washing bed linen once a week and 59 years once a week (p = 0.005). The higher age group associated with more frequent bed linen washing and this may skew the result. The large sample size of younger patients in this study is a limitation, a larger sample size would be preferable with age-matched subjects.

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REFERENCES