# The value of histopathological analysis of all clinically benign pterygia

Tejal Magan,[1,2] Maria Phylactou,[1,2] Nicola Lau.[1,2]

[1] Cornea and External Eye Service, Moorfields Eye Hospital NHS Foundation Trust, London, UK. [2] Moorfields Eye Centre at Croydon University Hospital

## Introduction

The prevalence of pterygium is geographically variable and reported to be between 0.3% to 12%.[1] Both pterygia and ocular surface squamous cell neoplasia (OSSN) share common risk factors such as UVB exposure, human papilloma virus infection and chronic ocular surface inflammation.[2,3] Co-existent OSSN within clinically diagnosed pterygia have previously been reported following histopathological examination.[4-6] Guidance provided by the Royal College of Ophthalmologists and the Royal College of Pathologists on the referral of ophthalmic specimens advise that all conjunctival specimens including suspected pterygium and pinguecula should be sent for histopathological analysis.[7] We aim to determine the prevalence of an unexpected alternative histopathological diagnosis, both neoplastic (OSSN) and non-neoplastic in patients with clinically suspected pterygium at a single satellite site of Moorfields Eye Hospital NHS Foundation Trust.

## Method

Retrospective study, with use of Medisoft auditing tool. Tool search included 'pterygium excision' performed under a single consultant surgeon team between July 2017 and August 2022 at Moorfields Eye Centre at Croydon University Hospital. Practice was to submit all clinically benign pterygia specimens for histopathological diagnosis as per Royal College guidance.

Individual electronic clinical records of these 104 eyes identified with the search tool were then reviewed to confirm a pre-operative 'pterygium' diagnosis. Patients with pre-operative clinical features suspected to be a diagnosis other than pterygium were excluded.

Histopathological examination reports from the Department of Eye Pathology, University College London Institute of Ophthalmology were then reviewed.

## Results

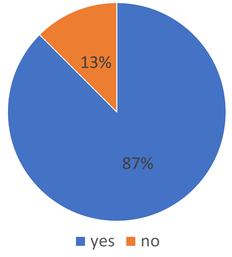



**Figure 1**. Availability of histopathology report

82 eyes (90.1%) had a confirmed diagnosis of pterygium/pinguecula. 9 eyes (9.9%) had an alternative unexpected diagnosis, these were reported as pseudopterygium (4.4%), pterygium plus benign melanocytic proliferation (1.1%), dermoid (2.2%), dermolipoma (1.1%) and non-specific inflammatory response (1.1%). There were no cases of OSSN.

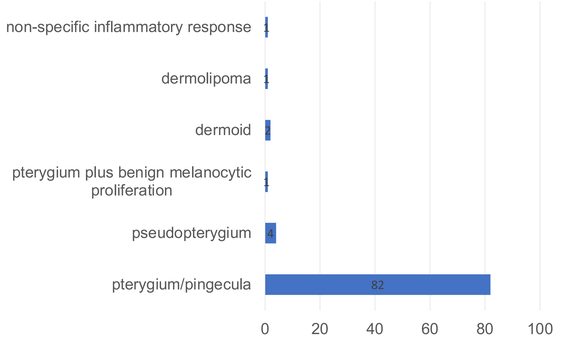



**Figure 2.** Final histopathological diagnosis (number of eyes, total 91)

## Conclusion

Overall, 9.9% of clinically suspected pterygium had a non-neoplastic alternative or concomitant diagnosis. Fortunately, there were no cases of neoplasia requiring further management. This absent rate of neoplasia in our study is consistent with previous studies in geographic regions with lower levels of UVB exposure.[4] All surgeons according to the Royal College of Ophthalmologists and the Royal College of Pathologists guidance are encouraged to submit conjunctival specimens in suspected pterygium cases, however, the yield of routine histopathological assessment in clinically non-suspicious lesions may be low. Future technological advancements such as the use of anterior segment optical coherence tomography may assist in differentiating pterygia from OSSN reducing the need to submit all clinically benign pterygia.

## References

1. Saw SM, Tan D. Pterygium: prevalence, demography and risk factors. *Ophthalmic Epidemiol.* 1999;6(3):219-228.
2. Kiire CA, Dhillon B. The aetiology and associations of conjunctival intraepithelial neoplasia. *Br J Ophthalmol.* 2006;90(1):109-113.
3. Di Girolamo N. Association of human papilloma virus with pterygia and ocular-surface squamous neoplasia. *Eye (Lond).* 2012;26(2):202-211.
4. Yeung SN, Kim P, Lichtinger A, et al. Incidence of ocular surface squamous neoplasia in pterygium specimens: an 8-year survey. *Br J Ophthalmol.* 2011;95(4):592.
5. Segev F, Mimouni M, Tessler G, et al. A 10-year survey: prevalence of ocular surface squamous neoplasia in clinically benign pterygium specimens. *Curr Eye Res.* 2015;40(12):1284-1287.
6. Modabber M, Lent-Schochet D, Li JY, Kim E. Histopathological Rate of Ocular Surface Squamous Neoplasia in Clinically Suspected Pterygium Specimens: 10-Year Results. *Cornea.* 2022;41(2):149-154.
7. Royal College of Ophthalmologists. (2016). *Ophthalmic Pathology.* https://www.rcophth.ac.uk/wp-content/uploads/2020/09/Ocular-Pathology-July-2016.pdf.