

Bilateral Corneal Perforation Secondary to Immunotherapy for Metastatic Melanoma

Prem A. H. Nichani¹, MD MSc, Alonso Gutierrez Guerinoni¹, MD,
David S. Rootman¹, MD FRCSC, Clara C. Chan¹, MD FRCSC

¹ Department of Ophthalmology & Vision Sciences,
University of Toronto

Introduction: To report an unexpected case of bilateral corneal perforations secondary to bispecific PD-1/IL2v complex immunotherapy for metastatic melanoma, preventative strategies, and methods of treatment.

Method: Case report and literature review.

Results: A 76-year-old female with a history of severe dry eye and recurrent metastatic melanoma presented with left eye acute atraumatic painless vision loss and was found to have a central corneal perforation; the right eye cornea revealed dry eye changes and no thinning. One day before presentation, the patient had received an infusion of a novel clinical trial bispecific immunotherapeutic agent for her melanoma given disease progression despite forty cycles of a monospecific anti-PD-1 agent. Treatment included intensive lubrication, topical moxifloxacin, oral doxycycline, oral acyclovir, application of a glue patch, and insertion of a bandage contact lens. A month later, one day after her second infusion, her right eye cornea, which had no clinically significant thinning at baseline, was found to be 70% thinned with a concomitant epithelial defect over the area of thinning. She was treated similarly to the left eye and, in collaboration with oncology, her immunotherapy infusions were held. In follow-up two months later, her glue patches have remained stable and her vision has improved significantly bilaterally.

Conclusion: Immunotherapeutic agents have revolutionized the treatment of recalcitrant cancer cases, addressing the global burden of cancer management. However, ophthalmologists must be aware of their side effects and take the time to educate patients and collaborate with oncology to ensure both adequate monitoring and prompt initiation of preventative treatment to obviate the necessity for patients to choose between vision-saving and life-preserving care.