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Ocular Graft-Versus-Host Disease in an 80-Year-Old Patient Following Bone Marrow Transplantation

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Abstract **Case Report**

Graft-versus-host disease (GVHD) is a severe and potentially sight-threatening complication following allogeneic bone marrow transplantation. Ocular involvement occurs in up to 60–90% of chronic GVHD cases, often manifesting as severe dry eye disease, conjunctival inflammation, and corneal epithelial defects. We report a case of an 80-year-old patient who developed ocular GVHD following a bone marrow transplant, highlighting the diagnostic challenges and management strategies in elderly patients.

Keywords: Ocular graft-versus-host disease, Allogeneic bone marrow transplantation, Dry eye disease, Elderly, Immunosuppression, Corneal epithelial defects.

INTRODUCTION

Graft-versus-host disease (GVHD) is a complex immunological condition that arises when donor-derived T cells attack host tissues. Ocular GVHD (oGVHD) represents one of the most common and debilitating manifestations of chronic GVHD. Although GVHD is more frequently observed in younger adults, elderly patients undergoing hematopoietic stem cell transplantation (HSCT) are increasingly affected due to expanding transplant indications and improved supportive care.

CASE REPORT

An 80-year-old male presented to the ophthalmology department with complaints of ocular dryness, photophobia, and blurred vision three months after undergoing an allogeneic bone marrow transplantation for myelodysplastic syndrome. Ocular examination revealed marked conjunctival hyperemia, punctate keratopathy, and reduced tear meniscus height. Schirmer's test showed less than 5 mm wetting in both eyes, and tear breakup time (TBUT) was under 3 seconds. No evidence of infection or mechanical obstruction was found. A diagnosis of chronic ocular GVHD was established based on clinical findings and systemic GVHD involvement.

Management and Outcome

The patient was started on preservative-free artificial tears, topical corticosteroids, and autologous serum eye drops. Punctal occlusion was performed to reduce tear drainage. Systemic immunosuppression with tacrolimus was continued under hematology supervision. At six months follow-up, the patient showed partial improvement in symptoms, with persistent ocular surface irregularity requiring ongoing treatment.

DISCUSSION

Ocular GVHD results from immune-mediated damage to the lacrimal glands, conjunctiva, and corneal epithelium. In elderly patients, pre-existing ocular surface disease and reduced regenerative capacity may exacerbate the severity of oGVHD. Prompt recognition and aggressive management are critical to preventing irreversible corneal damage and vision loss. Recent studies have shown that biologic therapies such as ruxolitinib and mesenchymal stem cell-derived exosomes hold promise for refractory cases.

CONCLUSION

This case highlights the importance of early ophthalmologic evaluation and multidisciplinary management in patients undergoing bone marrow transplantation, particularly in the elderly population. Ocular GVHD remains a significant cause of morbidity, and timely intervention is essential to preserve vision.

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