

Bhoomi Dave

Mayo Clinic Department of
Ophthalmology, USA

Biography

Bhoomi Dave, MD, is an ophthalmology resident at The Mayo Clinic with research interests in oculofacial plastics, orbital reconstruction, ocular oncology, and glaucoma. She has worked on clinical and translational projects ranging from orbital and eyelid pathology to glaucoma surgical innovation. Her prior research training at UT Southwestern and Johns Hopkins resulted in national presentations, grant-supported work, and peer-reviewed contributions, including data analysis for the novel Squid Glaucoma Shunt. Dr. Dave is particularly interested in multidisciplinary approaches to reconstructive and oncologic eye care and improving patient-centered surgical outcomes.

Extraocular Movement Deficit After Globe-Sparing Maxillectomy

Abstract:

Purpose: Globe-sparing maxillectomy for sinonasal tumors with orbital involvement can result in extraocular motility (EOM) deficits, significantly impacting quality of life. This study evaluates the incidence of EOM deficits and associations with degree of orbital involvement, reconstructive techniques, and surgical team composition.

Methods: A retrospective case series was conducted of all patients who underwent globe-sparing maxillectomy at 3 Mayo Clinic sites (2005–2024) with ≥ 3 months ophthalmology follow-up. Primary outcome was postoperative EOM deficit (Table 1). Mayo Clinic IRB approved this study.

Results: 61 patients met inclusion criteria, with a mean age at surgery of 50 ± 19 and median follow-up of 3 years. EOM deficits were identified postoperatively in 5 of 61 patients (8.2%) following globe-sparing maxillectomy. All cases with an EOM deficit involved both anterior and posterior extent of maxillectomy, compared to 78% of control cases without EOM deficit ($p=0.03$). Complete resection of the orbital rim and orbital floor occurred in 2 of 5 cases (40%), both of which underwent dedicated orbital reconstruction with free flap and vascularized bone graft. Patients with ophthalmologist involvement during primary surgery had significantly lower rates of post-operative EOM deficit than those without (0% vs 48%, $p=0.0022$).

Conclusions: Postoperative EOM deficits occurred in 8.2% of patients. All cases with deficits involved extensive maxillectomy with both anterior and posterior orbital involvement and lacked intraoperative ophthalmologist involvement. These findings suggest that multidisciplinary surgical collaboration, including ophthalmologist participation, and meticulous orbital reconstruction should be strongly considered for optimizing functional ophthalmic outcomes in globe-sparing maxillectomy.