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RETINAL DETACHMENT FAILURE, SURGEON OUTCOMES

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To Evaluate the incidence and predictors of primary rhegmatogenous retinal detachment (RD) revision among Medicare beneficiaries in the USA.

Design: Retrospective, multicenter, cohort study utilizing the complete Medicare outpatient claims dataset from 2014 to 2023

Subjects, Participants, and/or Controls: Adult patients undergoing RD repair using scleral buckle and/or vitrectomy, identified using Current Procedural Terminology (CPT) codes. We only included primary rhegmatogenous RD using International Classification of Diseases (ICD)-10 codes. We excluded patients with secondary RD, such as chorioretinal tumors or tractional detachments.

Methods, Intervention, or Testing: We extracted patient demographics and information pertaining to the RD (using ICD-10 modifiers) and surgical repair (using CPT codes). RD was divided into single break, multiple breaks, giant retinal tear (GRT), dialysis, or total RD. The surgical approach was categorized as buckle, vitrectomy +/- buckle, and complex vitrectomy +/- buckle. Surgeon-level factors included the surgeon volume of RD in the dataset, surgeon graduation year, practice volume, and setting (teaching vs non-teaching and urban vs rural). Surgeon volume was categorized as: 10-25 surgeries, 26-50 surgeries, and > 50 surgeries.

Main Outcome Measures: RD revision is defined as repeat surgery or pneumatic retinopexy in the same eye within 2 years.

Overall, 25,456 surgeries were included in the analysis. The average patient age was 70.4 ± 8.3 and 9,105 (35.8%) were female. Revision was needed in 3,649 (14.3%). The median time to RD revision was 73 days. The main significant predictors of RD revision were GRT (RR = 1.39; 95% CI = 1.13 – 1.72), total RD (RR = 1.30; 95% CI = 1.15 – 1.47), and complex vitrectomy +/- buckle (RR = 1.29; 95% CI = 1.09 – 1.53). Surgeon volume and practice volume categories were not significantly associated with RD revision.

Conclusions: RD revision was needed in 14.3% of primary rhegmatogenous RD repairs. The main factors associated with increased risk of RD revision were the need for complex vitrectomy, GRT and total RD. Surgeon and practice volumes were not significant predictors, highlighting the standardized and adequate training of retina surgeons in the United States, at least in managing primary rhegmatogenous detachments.

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