THE LITERATURE

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EVALUATION OF RISK FACTORS FOR GLAUCOMA DRAINAGE DEVICE-RELATED EROSIONS: A RETROSPECTIVE CASE-CONTROL STUDY

Trubnik V, Zangalli C, Moster MR, et al[1]

ABSTRACT SUMMARY

This retrospective study evaluated the risk factors for glaucoma drainage device (GDD) erosions. The investigators reviewed the medical records of 1,013 patients who underwent GDD surgery performed by five surgeons between 2006 and 2011. The study included charts that had complete data sets and at least 6 months of follow-up. Of 339 eyes, 28 (8.3%) developed conjunctival erosions. The researchers found that the only significant risk factor associated with conjunctival erosion was concomitant surgical procedures performed at the time of GDD implantation. The most common concomitant surgeries were pars plana vitrectomy and cataract surgery. Other risk factors suggestive of erosion were smoking, exfoliation glaucoma, and dry eye disease. The investigators concluded that a history of concomitant intraocular surgery at the time of GDD implantation might be a risk factor for erosion.

DISCUSSION

Why does concomitant intraocular surgery increase the risk of conjunctival erosion?

The increased risk of conjunctival erosion with concomitant intraocular surgery appears to be due to a combination of factors. Concurrent surgery such as vitrectomy and cataract surgery may induce conjunctival scarring or thinning, leading to erosion. Other factors such as increased operative time or manipulation of the eye with surgical instruments, conjunctival desiccation, and related inflammation associated with surgery may further predispose the conjunctiva to thinning and eventual erosion over the graft.

How might the results of this study influence surgical planning?

The study's results merit ophthalmologists' consideration when they are deciding on the type of surgical intervention required. When evaluating patients for combined procedures, staging may help minimize the risk of erosion. For example, in patients with poorly controlled open-angle glaucoma and a visually significant cataract, the surgeon may decide to implant the GDD initially and proceed with phacoemulsification at a later date or vice versa instead of performing a combined procedure. Alternatively, if concurrent surgeries are required, the surgeon may elect to perform a combined cataract extraction and trabeculectomy as opposed to combined cataract extraction and GDD implantation.

THE MOST COMMON BARRIERS TO GLAUCOMA MEDICATION ADHERENCE: A CROSS-SECTIONAL SURVEY

Newman-Casey PA, Robin AL, Blachley T, et al[2]

ABSTRACT SUMMARY

This prospective survey evaluated the frequency of commonly cited barriers to glaucoma medication adherence and identified those most associated with poor adherence among glaucoma patients. The authors surveyed 190 adults with the disease who were taking one or more glaucoma medications. The commonly cited barriers included in the survey were selected from literature reviews on poor adherence to prescribed glaucoma therapy. They included skepticism that the disease will cause vision loss or that medical therapy is effective, a poor understanding of glaucoma, poor self-efficacy, forgetfulness, cost, difficulties with the medication schedule, side effects, problems with eye drop administration, mistrust in the physician, and perceived life stress. The term *low self-efficacy* refers to a patient's decreased belief in his or her ability to execute a plan intended to slow glaucomatous progression.

Sixty-one percent of participants cited multiple barriers, 10% cited a single barrier, and 29% cited no barriers to optimal adherence. The barriers associated with poor adherence were low self-efficacy, difficulty instilling drops, forgetfulness, and trouble with the medication schedule.

DISCUSSION

What interventions can improve patients' adherence to medical therapy?

The results of this study suggest that targeted interventions or strategies could be tailored to improve compliance. Forgetful patients who have difficulty maintaining the medication schedule can be encouraged to set an alarm on their watches or smartphones to remind them to instill their eye drops. Patients can also be encouraged to match their dosing regimen with their activities of daily living (ie, they can instill a drop at bedtime after brushing their teeth). Patients who report difficulty with the physical aspect of administering eye drops may benefit from watching videos on the optimal

method for instillation. Perhaps the most difficult barrier to overcome is that of low self-efficacy. The provider can empower patients to manage their condition by educating them, having them state the positive benefits of using medications, and asking them to state the negative consequences of nonadherence.

Regardless of the specific barrier being targeted, the eye care provider's understanding of the patient as a person with a complex set of needs—as opposed to a simple disease entity—is essential.

What future studies can be considered on identifying barriers to patients' adherence?

As the investigators mention, there are several limitations to a study of this design and scope. The survey involved patients in only two settings, one academic glaucoma practice at the University of Michigan and one private practice in Baltimore. It is therefore not inclusive or necessarily reflective of the views of patients in practices, glaucoma or comprehensive, across the nation. Patients with worse adherence may not have participated in the study, so the frequency with which barriers were identified may not generalize to all patients. Additionally, neither race nor ethnicity was evaluated in the survey.

Future studies could analyze whether tailored education and counseling can increase patients' motivation to manage their glaucoma and improve their medication adherence. In creating an individualized approach to patients' education, it may also be helpful to evaluate the belief systems, especially in regard to health care, held by individuals of different cultures. ■

1. Trubnik V, Zangalli C, Moster MR, et al. Evaluation of risk factors for glaucoma drainage device-related erosions: a retrospective case-control study. *J Glaucoma*. 2015;24(7):498-502.
2. Newman-Casey PA, Robin AL, Blachley T, et al. The most common barriers to glaucoma medication adherence: a cross-sectional survey. *Ophthalmology*. 2015;122(7):1308-1316.

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