LASIK in patients with systemic contraindications

It may be time to reconsider the current absolute exclusion of certain systemic contraindications to LASIK, say Spanish researchers. They conducted an observational retrospective case-control study to determine the anatomic and functional outcomes of photorefractive surgery in patients with underlying systemic diseases traditionally listed as relative or absolute contraindications. The study included 275 eyes of 141 consecutive patients who underwent a LASIK procedure with any of the following underlying conditions: autoimmune connective-tissue disorders (62 patients); psoriasis (91 patients); intestinal inflammatory diseases (67 patients); diabetes (44 patients); and history of keloid formation (18 patients). Twenty-nine patients (56 eyes) were receiving systemic immunosuppressive therapy. The control group included 358 eyes of 181 otherwise normal healthy patients.

No other statistical differences were detected in both the case and control groups, with no statistical differences between groups. The only significant finding for functional outcome was a worsened refractive outcome in the collagen vascular diseases group compared with controls. No other statistical differences were detected in the other systemic disease groups.


Diabetic retinopathy associated with poor blood glucose control

A six-year study of African Americans with Type 1 diabetes showed a strong link between poor glucose control and progression of diabetic retinopathy. Hypertension was also a significant factor for retinopathy progression. The study followed 483 patients with Type 1 diabetes. Patients underwent regular retinal photography and clinical evaluations. Participants who had diabetes for the longest period of time were most likely to develop diabetic retinopathy and to progress to proliferative retinopathy. Those with high HbA1c levels and high blood pressure at the beginning of the study were more likely to develop progressive diabetic retinopathy, proliferative retinopathy and macular oedema. Development of proliferative retinopathy also was associated with older age, kidney disease and more severe retinopathy at the beginning of the study. Macular oedema was associated with older age, lower socioeconomic status, more severe retinopathy and higher total cholesterol levels.


A new look at ocular embryology

New European research calls into question some of the basic tenets of ocular development. Researchers at the European Molecular Biology Laboratory (EMBL) in Heidelberg report that cells are programmed to make eyes early in development and individually migrate to the right place to do so. The study overturns the textbook model of the process and suggests that other organs might also be formed by the movement of single cells rather than sheets of entire tissues. Jochen Wittbrodt and colleagues made the discovery using advanced microscope techniques to track individual cells in the transparent embryos of a small fish called Medaka. The research builds on earlier work showing that a protein called Rx3 is required for eye formation. Only cells that will become the eye begin producing this molecule early on in development. The researchers labelled these cells with a fluorescent marker and tracked them using advanced software. The process involved following thousands of cells and assembling tens of thousands of images into 3D movies.


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