Abstract

**PURPOSE:** To investigate the effect of diode laser cyclophotocoagulation for glaucoma on central visual function in patients with good visual acuity (VA).

**PATIENTS AND METHODS:** Patients with preoperative VA 20/60 or better who had undergone cyclodiode treatment according to a standard protocol were evaluated retrospectively. The primary outcome variable was a recorded loss of two or more Snellen lines of best corrected VA during follow-up. Successful intraocular pressure (IOP) control was defined as being between 6 and 21 mmHg inclusive without oral acetazolamide or other glaucoma surgery.

**RESULTS:** 49 eyes of 43 patients with a median pretreatment acuity of 20/30 were included (range 20/16-20/60). After a mean duration of follow-up of 5.0 years, median VA was 20/60 with a line loss of two or more recorded in 15 eyes (30.6%) (mean survival time 7.7 years). 67.3% (33/49) retained VA 20/60 or better, but VA deteriorated by one Snellen line or more in 31 (63.2%), and in 16.3% (8/49), final VA was <20/200. In cases experiencing a two-line loss in acuity, the main causes were glaucoma progression (nine cases) and macula oedema (four cases). Visual loss was unrelated to total treatment dose (mean 99.7 J), initial acuity or initial IOP level. IOP was controlled at final follow-up in 39/49 (79.6%) with no cases of hypotony.

**CONCLUSIONS:** Most of these eyes with difficult to manage glaucoma retained their good VA over long-term follow-up after undergoing diode laser cyclophotocoagulation. The proportion losing two Snellen lines is in line with that reported after trabeculectomy or tube surgery. These results suggest a possible role for the use of transscleral cyclodiode in selected eyes with significant visual potential. Further controlled prospective studies are required to better define this role.

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