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An ultrasound biomicroscopy study of filtering blebs after deep sclerectomy with a new acrylic implant.

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Abstract

PURPOSE: To identify the clinical and anatomic characteristics of filtering blebs after nonpenetrating deep sclerectomy (NPDS) using ultrasound biomicroscopy, and to evaluate its influence on intraocular pressure (IOP) control.

METHODS: We conducted a prospective interventional case series in 18 eyes of 18 patients who had undergone nonpenetrating deep sclerectomy with **Esnoper**® implant. A complete ophthalmic examination and ultrasound biomicroscopy (UBM) exploration were performed at 1, 3, and 6 months postoperatively.

RESULTS: Intraocular pressure significantly decreased from a mean of 23.5 mmHg (SD 3.5) preoperatively to a mean of 13.1 mmHg (SD 7.6), 13.2 mmHg (SD 4.3), and 13.3 mmHg (SD 3) at 1, 3, and 6 months postoperatively, respectively. At 6 months, lower IOP levels significantly correlated with hyporeflective blebs (r=-0.82, p=0.000), with the presence of hyporeflective suprachoroidal space (r=-0.67, p=0.003) and with the presence of hyporeflective area around the scleral lake (r=-0.55, p=0.02). The presence of these 3 filtration signs together correlated with lower IOP levels compared with the presence of only 1 or 2 (p=0.000, p=0.004, p=0.0005) at 1, 3, and 6 months postoperatively, respectively. A thinner trabeculo-descemetic membrane (TDM) was significantly correlated with lower postoperative IOP value at the first postoperative month (r=0.45, p=0.05). Intraocular pressure mean values and UBM characteristics were not significantly different between eyes with single NPDS and eyes following combined NPDS-phacoemulsification. At 6 months, eyes without goniopuncture had lower IOP values (p=0.02), higher bleb (p=0.015), and thinner TDM (p=0.01) than those needing goniopuncture.

CONCLUSIONS: Ultrasound biomicroscopy is a useful method to evaluate outflow mechanisms after NPDS and their correlation with postoperative IOP control.

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