Pars plana vitrectomy with 25-gauge instruments in the treatment of idiopathic epiretinal membranes

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BACKGROUND: The sutureless pars plana vitrectomy (ppv) using a 25-gauge instrumentation is a minimally invasive technique which is mainly performed for procedures that do not require extensive vitreous dissection. In a consecutive case series with retrospective collection of data, the advantages and the risks of this technique are discussed in comparison with the conventional 20-gauge ppv for patients with idiopathic epiretinal membranes.

PATIENTS AND METHODS: Between July 2003 and November 2004, 64 consecutive patients (26 men, 38 women, mean age: 72 years) were treated with a 20-gauge ppv, and between December 2004 and January 2006, 75 consecutive patients (42 men, 33 women, mean age: 70.4 years) were treated with a 25-gauge ppv. The patients were classified into three groups: ppv combined with phacoemulsification (group 1), ppv in pseudophakic eyes (group 2), or ppv without phacoemulsification (group 3). There were postoperative controls after at least 1, 30 and 180 days. RESULTS: The visual acuity improves quicker in the groups 1 and 2 of the 25-gauge ppv compared with the 20-gauge ppv due to less postoperative inflammation and to the practical absence of postoperative astigmatism. In the group 3, after using either a 25-gauge or a 20 gauge ppv, the development of a postoperative cataract restrained the improvement of the visual acuity. The following postoperative complications were noticed using the 25-gauge ppv: transitory hypotonia with an eye pressure < 5 mmHg (9 cases) and with attendant choroidal detachment (3 cases), macular oedema (1 case), and endophthalmitis (1 case); using the 20-gauge ppv: transitory hypotonia (9 cases), macular oedema (2 cases), and retinal detachment (3 cases). CONCLUSIONS: The sutureless 25-gauge ppv is advantageous for a quick postoperative recovery of the visual acuity, and may be well combined with cataract surgery. Nevertheless, this technique involves risks and its further evaluation, especially in comparison using a 23-gauge ppv, is indicated.