

Summary

Objective

After a history of 15 years of diabetes mellitus progressively *proliferative diabetic vitreoretinopathy* (PDVR) can occur. The objective of this study was to investigate visual recovery and clinical outcome after early vitrectomy in patients with PDVR. Two surgical treatments were assessed: pars plana vitrectomy (PPV) without peeling of the internal limiting membrane (ILM) and pars plana vitrectomy with peeling of the internal limiting membrane. So far there is only insufficient data on the point of time in PDVR at which a surgical intervention is indicated, which criteria (duration of vitreous hemorrhage, preoperative visual acuity) prior to surgery are of prognostical benefit on the clinical outcome after early vitrectomy and which patients suffering from diabetes mellitus stand to benefit from an early ophthalmosurgical intervention. The further objective of this study was to investigate whether additional removal of the internal limiting membrane has an additionally positive effect on the clinical outcome after early vitrectomy.

Methods

Clinical outcome after early vitrectomy was investigated in 63 eyes. To differentiate, whether early vitrectomy combined with peeling of the internal limiting membrane has beneficial effects on the clinical outcome, patient population was set in a prospective study splitted into subgroups A and B. Examination of the subgroups was performed preoperatively as well as three times after surgery. The follow-up period was 6 months after pars plana vitrectomy in subgroup A and pars plana vitrectomy combined with ILM-peeling in subgroup B. Arterial hypertension, renal failure, insulindependent diabetes mellitus as well as secondary glau-

coma were set in relation to visual recovery, preoperative vitreous hemorrhage and postoperative secondary bleeding.

Results

By the end of the follow-up period significantly improved or unchanged visual acuity was observed in 52 of 63 eyes. In 82.15% of treated eyes a further decrease of visual acuity could therefore be prevented. In subgroup A significantly improved or unchanged visual acuity was observed in 40 of 49 eyes by the end of the follow-up period, in 81.64% of treated eyes a further decrease of visual acuity could therefore be prevented. In subgroup B significantly improved or unchanged visual acuity was observed in 12 of 14 eyes by the end of the follow-up period, in 85.71% of treated eyes a further decrease of visual acuity could therefore be prevented. There was no significant difference in subgroups A and B concerning postoperative visual acuity or secondary bleeding.

Discussion

Early surgery in treatment of PDVR is even more beneficial than assumed, as the results concerning postoperative visual acuity show. Progression rate of PDVR after early surgical treatment appears to be low according to the results of this study. Analysis of the collected data showed no significant difference comparing subgroups A and B; therefore combined ophthalmosurgical intervention (PPV and ILM-peeling) represents no advantage to PPV without ILM-peeling in patients with proliferative diabetic vitreo-retinopathy.