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Giant Retinal Tear Management at Cicendo Eye Hospital National Eye Center

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Abstract

***Background**: to report the characteristics, management and outcome in giant retinal tear (GRT) associated retinal detachment patients at Cicendo Eye Hospital*

***Methods**: this retrospective study was performed on medical records who had undergone retinal detachment surgery between January 2014 and March 2017. Age, sex, etiologies, size of GRT, quadrant involvement, lens status, proliferative vitreo-retinopathy (PVR), managements and outcomes were evaluated in association with giant retinal tears*

***Result**: Twenty-six patients (23 males, 3 females) age between 11-59 years with follow up from 2 months to 18 months were enrolled in this study. Twenty-five eyes have retinal detachment with macular involvement and 11 patients had high myopia. Majority of patients had 90° of GRTs. Most retinal tears were located at temporal quadrant (73%). Nineteen patients had undergone pars plana vitrectomy (PPV) and 7 patients had combined PPV with encircling buckle. Fifteen patients had used heavy liquid. 24 patients had silicon oil and 2 had gas tamponade. Intraoperative complications included lens trauma, retinal slippage and choroidal detached were found in 1 eye respectively. Fourteen eyes had recurrent retinal detachment. At the last follow up, 14 patients had anatomically attached retina. Twelve patients had total retinal detachment and marked PVR. Five fellow eyes were treated with prophylactic laser. Visual acuity improved in 11 eyes.*

***Conclusion**: Giant retinal tears were more common in patients with high myopia. Management of GRT currently with PPV and PPV combined with encircling buckle. The success rate of anatomy and visual acuity was less than other previous studies*

***Keywords**: giant retinal tear, proliferative vitreo-retinopathy, pars plana vitrectomy*

Introduction

Giant retinal tear (GRT) is a full-thickness retinal break extending circumferentially for 90 degrees or greater of the retina associated with vitreous detachment. Their management poses significant challenges due to the many complications and technical difficulties involved for unfolding and sealing the retinal tear.[1,2] Although GRT can occur spontaneously, they are often associated with a number of conditions; this include ocular trauma, high myopia, pseudophakia, hereditary conditions, for example, Marfan syndrome, Stickler syndrome, extensive Lattice degeneration and young age.[3,4] With such a large tear, the anterior insertion of the retina no longer offers peripheral support and the retina folds back on itself. The retina also tends to roll due to the absence of vitreous attachment.[5]

A wide range of techniques have been used with varying degrees of successs. Recently, common techniques used to treat GRT include primary vitrectomy with expansile gas or silicon oil tamponade, and combined scleral buckle-vitrectomies. The use of heavy liquid as an adjunctive tool has made unfolding and stabilization of the retina easier. The use of silicon oil has also been proven to be more effective in early visual rehabilitation, and is also safer to exchange with perfluorocarbons.[5]

Proliverative vitreo-retinopathy (PVR) is one of the late complications of GRT, and the leading cause of surgical failure. Increased access to the exposed retinal pigment epithelium (RPE) allows greater spillage of cells and pigment into the vitreous cavity and on the retinal surface, thereby increasing the risk of PVR.[6] Giant retinal tears in pediatric patients (younger than 16 years) are more likely to be associated with PVR which may be due to a delay in diagnosis or the greater wound healing response in children.[4] Other mechanism predisposing to PVR include the presence of vitreous hemorrhage and breakdown of the blood-ocular barrier leading to production of cytokines which could further stimulate cellular proliferation.[6,7]