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Surgical Removal of Subfoveal Choroidal Neovascular Membranes in Age-related Macular Degeneration

Key Words

Subfoveal choroidal neovascular membranes (CNVMs)
Age-related macular degeneration (AMD)
Submacular surgery
Laser photocoagulation
Histopathology

ABSTRACT

Poor vision in age-related macular degeneration (AMD) complicated with subfoveal choroidal neovascular membranes (CNVMs) continues to be a challenge for ophthalmologists. Conservative observation and laser photocoagulation for subfoveal CNVMs in AMD result in a decrease in visual acuity and an absolute central scotoma. Because of these limitations, efforts have focused on surgical removal of CNVMs with the goal of recovery or stabilization of foveal vision. We report on 6 eyes from 5 patients of AMD with CNVMs (visual acuity less than 20/400) who underwent surgical removal of subfoveal CNVMs, and whose surgical specimens were examined by histopathologists. Post-operative ocular examinations were followed up for at least 24 months. The surgical results show that visual acuity remained stable or improved in 5 of 6 eyes (83%) and decreased in 1 eye (17%), and no recurrence of CNVMs was found. Surgical removal of CNVMs was complicated by an intimate adherence of the membrane with the overlying neurosensory retina, so histopathological evaluation of the excised tissue showed endothelial-lined vascular channels, retinal pigment epithelium, fibrocytes, and collagen scar tissue. Submacular surgery for subfoveal CNVMs in AMD may be another management option to preserve vision; however significant visual recovery requires additional efforts in surgical techniques, retinal pigment epithelium transplantation, and clinical trials.

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INTRODUCTION

Age-related macular degeneration (AMD) is the leading cause of irreversible severe visual loss among Caucasians in the United States aged 50 or older. The prevalence of severe visual impairment increases with age: 2.2% of patients 65 years old or older have visual acuity of less than or equal to 20/200 due to AMD.

Therefore, in 1995 an estimated 745,000 people over 65 will have severe visual impairment in 1 or both eyes from AMD in the USA.

AMD has 2 specific presentations, non-exudative or "dry" macular degeneration and exudative or "wet" macular degeneration. Although most people with macular degeneration have the nonexudative forms of the disease, the majority of patients with severe visual

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