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# The Necessity of Prophylactic 360 Degree Laser Photocoagulation During Vitrectomy for Dropped Nucleus

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### Abstract

The aim of this study is to analyse the role of the prophylactic 360 degree laser photocoagulation on vitrectomies for dropped nucleus, and to examine whether it is useful or harmful for the development of retinal detachment by evaluating a retrospective case series. The patients who performed pars plana vitrectomy (PPV) due to the development of dropped nucleus after phacoemulsification between 2003 and 2015 in three different centers were retrospectively reviewed. The mean age of 79 patients was  $67.04 \pm 7.36$  years (range, 51-82 years); 51.9% were female. 5 of the patients have retinal tear before pars plana vitrectomy. 6 of 9 patients with RD have proliferative vitreoretinopathy (PVR). 8 patients underwent PPV surgery for twice and 1 patient underwent pars plana vitrectomy surgery for three times. We determined that proliferative membranes originated from prophylactic laser border in patients with PVR. As a conclusion, prophylactic 360 degree laser photocoagulation is not necessary during vitrectomy for dropped nucleus. Excessive laser photocoagulation can lead PVR. Instead of this process, it should be paid attention for scanning the periphery of fundus for peripheral retinal breaks. If retinal breaks are encountered, at that time retinal breaks should be surrounded by laser photocoagulation.

## 1. Introduction

Rhegmatogenous retinal detachment is a serious case which has a threatening potential for vision. It occurs with the subretinal effusion in the potential space between neurosensory retina and retina pigment epithelium under it. In the rhegmatogenous retinal detachment, retinal integrity is impaired or a retinal tear occurs [1]. In the studies conducted, it is stated that the incidence of retinal breaks or tears in population is 2-9% [2-3]. Even though just a few of retinal breaks cause retinal detachment, several studies about timing of prophylactic treatment have been conducted [4].

Pars plana vitrectomy has become the most common surgical method for the primary treatment of pseudophakic rhegmatogenous retinal detachment in the United States and the United Kingdom. The reported rates of reattachment after pars plana vitrectomies for the pseudophakic rhegmatogenous retinal detachment vary from 72% to 88% [5].

Cataract surgery has become one of the surgeries which is used most commonly and performed securely in the most of the patients today [6]. Cataract surgery is known to have been performed since ancient times. With the use of intraocular lens and phacoemulsification technique, it has made a significant progress [7]. Technological progress has improved the results in the cataract surgery and reduced the complications.