

2. Questions

About 100 years ago, a retinal detachment was officially declared to be untreatable by International Congress in Paris ^[109]. However, in 1920 Gonin first described successful surgery for the repair of retinal detachment by treating the causative retinal breaks. Since then, the surgical techniques, instruments and methods for treatment of retinal detachment have constantly been improved. After the initial surgical trials, the first major breakthrough was accomplished by Custodis in 1949 ^[110] with the introduction of scleral buckling surgery which was modified by Lincoff et al ^[111]. Secondly, pars plana vitrectomy was introduced by Machemer in 1970 ^[17]. Lastly, pneumatic retinopexy was introduced by Hilton and Grizzard ^[112] in 1985.

Thus at present the major controversial focuses are as follows:

1. Which surgery is the best treatment method for different RRD? This is a current focus of controversy, since PPV became tremendously popular and many situations of moderate difficulty can be treated successfully with both methods.
2. How to achieve the best anatomic and functional results, and how to reduce surgical complications to the minimum?
3. How many clinical factors influence surgical results and complications?

This study reports surgical outcomes, complications and prognostic factors of a consecutive series of 512 eyes undergoing PPV as the initial surgery for RRD at the Charité Medical University Hospital Benjamin Franklin in Berlin. The major points of this study are the following:

1. Can a better anatomic and functional results been achieved by PPV in the patients with RRD?
2. What are the reasons of primary retinal redetachment and bad final visual acuity?
3. Which clinical factors influence postoperative anatomic, functional results, PVR and macular pucker?