Management of Pediatric Rhegmatogenous Retinal Detachment

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Abstract

Pediatric rhegmatogenous retinal detachment is a rare and challenging disease. Although often associated with poor visual outcomes, thorough ophthalmologic examination and management can preserve vision and profoundly impact these patient's lives.

Introduction

Pediatric rhegmatogenous retinal detachment is uncommon, ranging from 3 % to 12.6 percent of all rhegmatogenous retinal detachment (RRD).[1] Pediatric RRD often related to trauma or an underlying congenital abnormalities, genetic syndrome, and previous intraocular surgeries, while most RRD in adult are related to posterior vitreal detachment. [2,3] Myopia also found to be one of the important predisposing factors in East Asians according to Wang et al.[1]

Pediatric patient presents many challenges and requires special consideration in terms of vitreoretinal surgery due to the difficulty of examining the signs, recognising the symptoms of RRD, variety of underlying diseases and rarity of patients.[4] A detailed examination under anesthesia is often required.

Bilateral retinal detachments are more common in pediatric population. Children with unilateral retinal detachment have high rates of retinal tears and lattice degeneration in the contralateral eye. The rate of high-risk peripheral pathology is reported to be as high as 80-90%.[5]

Configuration of pediatric RRD differs from that of a typical adult RD. It often reflected a chronic process, with prescence of demarcation lines and macrocyst. The late development of pediatric RRD may be because of the tight adherence between the vitreous gel and the retina and the absence of vitreous liquefaction and PVD. [6]

Specific causative factors for pediatric retinal detachments including trauma, inherited syndromes associated with high myopia and abnormal vitreous such as Stickler syndrome, Wagner disease and erosive vitreoretinopathy, Knobloch syndrome, Marfan syndrome, X-linked juvenile retinoschisis, and inferotemporal retinal dialysis.[2]

The smaller size of the infant eyes present some differences in surgical landmarks, relative instrument size, and fluid dynamics, as well as increased vitreous adhesion. Majority of pediatric RRD should be approached initially with placement of scleral buckle. Some surgeon even prefer to place a scleral buckle alone in cases with at least PVR grade C.[7] The scleral thickness is thinner than it is in adult eye, therefore thinner (6/0) suture should be used for partial-thickness scleral sutures in babies. Complications of scleral buckling in young children is amblyopia due to alteration of eye growth. Some surgeon prefer to cut