

# Visual results in children treated for retinoblastoma

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EDITORIAL

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Amblyopia is by definition a preventable cause of loss of vision.<sup>1,2</sup> The ideal approach to managing amblyopia is to detect amblyogenic factors before the age of 2 years and prevent it through eliminating the causes of visual deprivation.<sup>2,3</sup> Among the many factors that influence visual recovery, earlier diagnosis and treatment compliance are the most significant.

Fortunately, retinoblastoma is only a rare, although a serious cause of amblyopia.<sup>4</sup> There are multiple mechanisms by which amblyopia can develop in the setting of retinoblastoma. These include strabismus, treatment-related complications such as radiation-induced cataracts, and macular involvement by the tumour. Therefore, it is important to realize that the risk of amblyopia exists in all phases of retinoblastoma management, that is before the treatment of retinoblastoma (diagnosis), during treatment of retinoblastoma, and even after retinoblastoma has been successfully treated.<sup>5</sup>

The main goal in retinoblastoma management is to eliminate tumor-related mortality. Preservation of the globe and visual acuity are important secondary considerations. Recent advances in the treatment of retinoblastoma have led to improved survival in developed countries with a 5-year cumulative survival rate of greater than 90%.<sup>6,7</sup> Moreover there is a trend away from enucleation.<sup>8</sup> With the use of chemotherapy and adjuvant local therapy, fewer eyes are subjected to enucleation and radiotherapy.<sup>9–11</sup> Published studies on the use of chemotherapy in treatment of retinoblastoma have so far emphasized the response rate and

complications of treatment.<sup>9–13</sup> There are a limited number of studies that have reported visual outcome following treatment of retinoblastoma by either radiotherapy<sup>14–17</sup> or by chemotherapy.<sup>18</sup>

In an article published in the last issue of *Eye*, Watts and his associates have presented visual results in children with macular retinoblastoma who were also treated for amblyopia.<sup>19</sup> In a selected group of 15 children with macular involvement, part-time total occlusion was performed for treatment of underlying amblyopia, depending upon the age of the child. With a median follow-up of more than 2 years, 80% of children showed improvement in vision. In 10 of 11 eyes in which logMAR acuities could be recorded, the mean difference of 0.67 logMAR was statistically significant. The final acuity was 1.0 logMAR or better in almost 75% of children. In these young children with maturing visual systems, the improvement in visual acuity was over and above the effect of maturation.

Although limited in impact by the design of the study (retrospective, non comparative) and the small number of cases, their findings clearly demonstrate the benefit of amblyopia treatment for children with macular retinoblastoma. Their study further supports the concept that despite the appearance of a scarred macula, the possibility of reversible functional amblyopia should always be considered.<sup>5,14</sup> More importantly, the study provides evidence that efforts made in salvaging eyes with macular retinoblastoma by using chemotherapy and local therapy, which requires extensive careful monitoring, are worthwhile from a visual standpoint because the final acuity was 1.0 logMAR or better in almost 75% of children.

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