

# Histopathological Risk Factors of Retinoblastoma

In this issue of Iranian Journal of Ophthalmology (IRJO) Han Yue et al<sup>1</sup> from China have presented a very interesting investigation on “Histopathologic Risk Factors of Retinoblastoma: A Retrospective Study of 104 Enucleated Eyes” which we are very grateful of the authors. Before indicating few points about this article and their pathologic classification it is worthwhile to mention the “Proceedings of the Consensus Meeting from the International Retinoblastoma Staging Working Group on the pathology Guidelines for the Examination of Enucleated Eyes and Evaluation of Prognostic Risk Factors in Retinoblastoma”.<sup>2</sup>

They defined massive choroidal invasion “as a Maximum diameter of invasive tumor focus of 3 mm or more that may reach the sclera tissue”, and focal choroidal invasion was defined “as a tumor focus of less than 3 mm and not reaching the sclera”. In their new high risk histopathologic factors (HRFs) of retinoblastoma (RB) Han Yue et al<sup>1</sup> have proposed a different concept for the HRF of choroidal invasion. They have defined type 1 as “isolated, sporadic tumor cells”, type 2 as “localized nest-like or nidulant tumors” and type 3 as “lumpish massive or dense invasion with or without obvious choroidal thickening”. The HRF has been found in 53% of 104 cases of the Chinese patients. The HRF's for the Chinese authors were the followings: type 3 choroidal invasion, postlaminal invasion of the optic nerve, and invasion of the sclera. The invasion of the anterior segment was not considered as a risk factor and also the endophytic RB's had a better prognosis compared with exophytic ones. The authors also proposed that the qualitative analysis of the choroidal invasion rather than quantitative extension was more determinant in the outcome of the tumor. However, the authors have not defined the qualitative indices of the invasion. In fact Asadi-Amoli et al<sup>3</sup> in an interesting investigation on 60 paraffin-embedded eyes of enucleated RB eyes have used CD34 antibody to determine the importance of angiogenesis in the outcome of the tumor and its local invasion to choroid, ciliary-body and optic nerve. They found a statistically significant correlation between mean vascular density and 5 year survival rate (P=0.031). Some other factors could also influence the gravity of this process such as extensive mitosis of the RB cells.

Han Yue et al<sup>1</sup> have indicated 53% of HRF in their cases but not explaining why only 30% have received postoperative adjuvant therapy. In some cases they admit that the parents have refused further treatments but should these untreated cases not to be classified among the deceased ones.

It is true that in developing countries the HRF for RB is much higher<sup>4-6</sup> than the developed countries<sup>7</sup> and the authors explain the longer lag time and consequently more advanced stages of RB are the causative factors.

The very low mortality rate of the patients; 4 out of 104 cases in RB patients with such high risk factors for tumor extension could be explained only by the very short period of follow-up for a neoplasm which is very slowly progressive, and the loss of patients in follow-up.

In fact we can obtain an essential point from this article which is the new proposed classification of the HRF's in histopathology of enucleated eyes of RB. The verification of this classification should be proven in a very large, multicenter and prospective investigation.

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## References

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