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Editorials

Factors influencing metastasis in retinoblastoma

The opportunity now exists for a complete cure in almost all cases of retinoblastoma presenting in the developed countries. The single most important factor responsible for recent improvements in retinoblastoma survival rates has been the use of highly effective chemotherapy regimens as an adjunct to surgery and to radiotherapy in selected cases.[1]

Few cancers can be cured by local treatment of an advanced primary tumour alone. Cure rates have improved mainly in those tumours which are sensitive to systemic agents. Retinoblastoma is highly responsive to new drug combinations whereas we still have no satisfactory systemic therapy for malignant melanoma. Herein lies the explanation why metastatic death from retinoblastoma has been virtually eliminated in Great Britain in the last decade whereas ocular melanoma has shown no significant improvement in survival rates during the same period.

Reduction of metastatic death from retinoblastoma has meant that in the St Bartholomew's Hospital series more children now succumb to one of the second non-ocular cancers to which survivors of the genetically determined variant are predisposed than die from dissemination of their ocular primary cancer. There is evidence to suggest that treatments, particularly radiotherapy, may play a part in the induction of some second tumours.[2,3] Consequently, modern retinoblastoma therapy aims to minimise the use of agents which might lead to late death or morbidity from another cancer. There is therefore a need to target with potentially dangerous agents only those individuals at significant risk of dissemination. In this respect, the histological risk factors predictive of metastatic spread have become vitally important. In their article in the present issue of the journal, Shields and co-workers have confirmed the impression of others[4,5] that presence of choroidal invasion in an enucleated eye significantly increases the risk of metastasis only when there is concurrent optic nerve invasion. In the St Bartholomew's Hospital patients with this association 10 out of 12 children (83%) died of metastatic retinoblastoma or intracranial extension.[4] In 62 other children, only one death was attributable to metastatic disease from choroidal invasion. The high risk group was thus dramatically well defined!

The proof of the pudding is in the eating: since 1985 all children in London with major choroidal invasion and retrolaminar optic nerve invasion have received systemic adjuvant chemotherapy after enucleation. Those with optic nerve invasion to the resection margin have additionally undergone orbital radiotherapy. To date, there have been no deaths in 11 children so treated and followed for more than a year.

Many eyes with locally advanced retinoblastoma are still enucleated in non-specialist centres. In the light of present knowledge it is clear that not only must choroidal and optic nerve invasion be carefully assessed in these eyes but also that treatment to limit metastatic potential must be offered where appropriate.

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