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Neuroblastoma

mIBG in its Diagnosis
and Management

With 241 Figures

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Cover illustration: Case 3, Stage IV Neuroblastoma, with isotope uptake seen in right lateral skull, posterior chest and abdomen, and posterior pelvis.

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Preface

Neuroblastoma is the third most common malignancy of childhood, accounting for 8% of all cancers in patients under 15 years of age. In the majority of cases, by the time neuroblastoma is diagnosed, it has already spread from its site of origin to involve distant sites. Approximately 90% of cases of neuroblastoma can be diagnosed by a combination of techniques including detection of specific tumour markers in the urine, histopathological and immunocytological assessment of involved bone marrow and the 'characteristic' appearances of tumours demonstrated by computerised tomography and ultrasonography. However, despite this plethora of techniques, up to 10% of cases of neuroblastoma are still difficult to diagnose and rely on excisional biopsy of a site of disease. It was against this background that the scintigraphic localisation of neuroblastoma with the radiolabelled guanethidine analogue, mIBG, became available. With mIBG scintigraphy it is now possible to demonstrate the presence of neuroblastoma (and related tumours) at the primary site, soft tissue sites, in the bone marrow and in cortical bone, in a single investigation. The success of mIBG scintigraphy depends on many factors including the choice of isotope for labelling the mIBG, the equipment used to carry out the procedure, and the manipulation and interpretation of the information obtained.

At the Royal Marsden Hospital we have performed over 100 mIBG studies in children, and our advice has frequently been sought by other centres who are, or intend to become, actively engaged in this field. It was as a result of these enquiries that we decided to put together this book. We have not attempted to give a detailed dissertation and literature review of mIBG, but we have aimed to provide the basic information required when embarking on mIBG scintigraphy and a reference source of mIBG studies for comparison with normal and abnormal mIBG scintigrams.

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