Bone Metastasizing Renal Tumour of Childhood

Histopathological and Clinical Review of 38 Cases

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Summary. The histopathological spectrum of a large series of a recently described tumour entity is presented. Seven diagnostic features which may be encountered are described and their frequency discussed. The most striking clinical feature was the marked male preponderance (M:F = 7.6:1). It is suggested that an appreciation of the full histopathological spectrum is necessary to ensure adequate diagnosis.

Key words: Renal tumour – Childhood – Histopathology – Bone metastases.

Introduction

The entity of a Bone Metastasizing Renal Tumour of Childhood (BMRTC) has been distinguished from Wilms' tumour both as regards pathological appearances and clinical behaviour (Marsden and Lawler 1978; Marsden et al. 1978; Lawler and Marsden 1979). Its relative rarity (approximately 4% of primary childhood renal tumours) makes it difficult for any one centre to acquire sufficient material for adequate histopathological study. The microscopic features may show considerable variation, not only between different tumours but also between different areas of individual tumours. Thirty-eight examples of this neoplasm, collected from various sources, have been studied, and a histological analysis is presented.

Materials and Methods

The histological material was obtained from four sources: – the Manchester University Childrens' Tumour Registry (1954 to 1976 inclusive) – the First and Second Medical Research Council (MRC) Nephroblastoma Trials and the Oxford Childhood Cancer Study Group.

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Pathological Material

In all cases, haematoxylin and eosin stained sections were available. In the majority, several sections from different parts of the tumour were obtained, but in a small number, only one section was provided. Whenever possible, other stains, particularly Alcian blue and PAS were used.

All the tumours were analysed for certain histological features which were assessed semi-quantitatively as 0, +, ++ and ++++. These features are listed below together with a brief description and illustration.

Fig. 1. "Classical" pattern showing ovoid and polygonal cells with delicate chromatin and intervening capillaries. H & E ×350

Fig. 2. Prominent capillary pattern separating groups of cells. H & E ×150