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Magnetic resonance imaging spectrum of medulloblastoma.

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Abstract

INTRODUCTION: Two medulloblastoma variants were recently added to the WHO classification of CNS tumours. We retrospectively analysed the imaging findings of 37 classic and 27 cases of variant medulloblastomas to identify imaging characteristics that might suggest a particular MB subtype.

METHODS: Sixty-four patients from three institutions were included. Location, tumour margins, signal intensities on conventional MRI, enhancement pattern, the presence of haemorrhage, calcifications and hydrocephalus were recorded and analysed. Signal characteristics on diffusion-weighted MR images and MR spectra were evaluated when available.

RESULTS: Thirty-seven classic type of MB (CMB), twelve cases of desmoplastic/nodular medulloblastoma (DMB), nine medulloblastomas with extensive nodularity (MB-EN), five cases of anaplastic and one of large-cell medulloblastoma were included. Fifty of 64 tumours were located in the 4th ventricle region. On T2WI, CMB were all hyperintense, whereas DMB and MB-EN showed isointensity in up to 66%. One third of the classic MB showed only subtle marginal or linear enhancement. All medulloblastoma variants showed marked enhancement.

CONCLUSION: The results of our study suggest: (a) an age-dependent distribution of MB variants, with DMB and MB-EN more common in younger children; (b) a female predominance in DMB; (c) a more common off-midline location in DMB (50%) and MB-EN (33%) variants.

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