

Characteristic MRI findings of metastatic neuroblastomas and choroid plexus papillomas in the orbit in children

J. Xian¹, Z. Wang¹, L. He¹

¹Department of Radiology, Beijing Tongren Hospital, Beijing, Beijing, China, People's Republic of

Purpose Accurate diagnosis of metastases is of the utmost importance for treatment planning, for children with metastatic neuroblastomas and choroid plexus papillomas in the orbit often present initially with orbital manifestations. The purpose is to evaluate characteristic MRI findings of metastatic neuroblastoma and choroid plexus papilloma in the orbit in children.

Methods Fourteen patients consisted of nine metastatic neuroblastomas and five choroid plexus papillomas in the orbit proven pathologically, with age range from 1-9 years old. Multiplanar T1W images, T2W images, and postcontrast T1W images with fat suppression were obtained in all patients. Simultaneously CT was performed in all patients.

Results All fourteen patients showed a soft tissue mass with lytic bone destruction. The masses displayed intermediate signal intensity on T1W images and heterogeneously high signal intensity on T2W images. With gadolinium, these tumors appeared moderate enhancement. In addition, postcontrast T1W images with fat suppression demonstrated extensive high signal intensity within the bone marrow of bilateral lateral orbital walls and greater wings of the sphenoid bone as well as bilateral petrous apices, which were the specific findings different from those of other lesions including the Langerhans' cell histiocytosis and the rhabdomyosarcoma.

Conclusion Postcontrast T1W images with fat suppression can show the specific findings of metastatic neuroblastoma and choroid plexus papilloma in the orbit in children, contributing to diagnosis and differential diagnosis.

Key words Orbit; Neoplasm; Magnetic resonance imaging