Ring-enhancing pontine lesion in a young boy

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DESCRIPTION

A 10-year-old boy presented with a 1-month history of headache, vomiting and progressive weakness. On neurological examination the patient had left hemiparesis, dysconjugate gaze with nystagmus and right-sided sixth nerve palsy. Review of systems was negative for fevers or prior illness. A T1 contrast-enhanced MRI revealed a ring-enhancing lesion situated in the pons with surrounding vasogenic oedema (figure 1). Owing to the unusual MRI features and extensive differential diagnosis of ring-enhancing lesions, the patient was taken to the operating room for a biopsy where pathology was consistent with a diagnosis of high-grade glioma. Postoperatively the patient tolerated the biopsy without complications and received conformal intensity modulated radiation therapy and concomitant oral temozolomide.

Unfortunately, the boy died 8-months after the biopsy due to the progression of the disease. Brainstem gliomas in children can be broadly classified as focal or diffuse. High-grade brainstem tumours in children are most commonly diffuse intrinsic pontine gliomas and do not show focal enhancement.¹ Contrast enhancing brain stem lesions that mimic tumours include infectious aetiologies such as toxoplasmosis, bacterial abscess, neurocysticercosis, sarcoidosis and tumefactive demyelinating disease. Our case highlights the unusual ring-enhancing characteristics of paediatric high-grade brainstem glioma and supports the current literature that brainstem biopsy can be performed safely with minimal morbidity in cases where a diagnosis is unclear.^{2,3}

Figure 1 MRI features of pontine lesion. T1 postgadolinium sequences reveal a ring-enhancing pontine lesion with surrounding vasogenic oedema where pathology revealed a high-grade glioma.

Learning points

- ▶ The differential diagnosis of ring-enhancing brainstem lesions includes neoplasm, demyelinating disease and infectious aetiologies.
- ▶ High-grade glioma should be considered in the differential diagnosis of ring-enhancing brainstem lesions.
- ▶ Biopsy of brainstem lesions is safe and may be helpful in guiding further treatment in cases with atypical neuroimaging features.

Competing interests None.

Patient consent Obtained.

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