Case 961

Eurorad

Intracranial Ganglioglioma

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ISSN: 1563-4086
Section: Neuroradiology
Imaging Technique: MR
Case Type: Clinical Cases
Authors: J.W. Wallis, W.J.J. Van Rooij
Patient: 21 years, male

Clinical History:

One year history of seizures and dizziness. Previously treated by antiepileptic drug therapy, but showed no response.
Imaging Findings:

The patient presented with one year history of seizures and dizziness was admitted to the hospital for further evaluation. Previously he was treated by antiepileptic drug therapy, but showed no response. Physical and neurological examination at admission revealed no pertinent information. MRI of the brain was performed.
Based on clinical and MR imaging findings a tumor was suspected. After complete surgical removal of the tumor, radiation therapy was applied. Histological examination of the resected specimen disclosed a well-differentiated ganglioglioma.
Discussion:

Ganglioglioma is a rare primary tumor of the brain. According to recent studies it accounts for 0.4-7.6% of all intracranial tumors in children and up to 1.3% of intracranial tumors in adults. The term ganglioglioma was introduced by Perkins in 1926. Histologically the tumor consists of glial elements and differentiated nerve cells. It is a relatively low graded tumor. Malignant degeneration or metastasis are very rare. Approximately 40% of gangliogliomas have cystic components. According to the WHO-classification the biological behavior of ganglioglioma is comparable to astrocytoma grade II. Ganglioglioma occurs at any location in the brain, but predilection sites are the temporal lobe and the floor of the third ventricle. Clinically it manifests with seizures, dizziness, medically intractable epilepsy, and less commonly focal neurological deficits. MR features of ganglioglioma are not specific. The solid part of the tumor is isointense on T1-weighted images, slightly hyperintense on T2-weighted images, and of very high signal intensity on proton density images. The cystic components of the tumor are hypointense on T1-weighted images and markedly hyperintense on T2-weighted images. Calcifications, seen as signal voids, are not well appreciated on standard spin echo sequences, but they may be visible on CT scan. The differential diagnosis includes juvenile pilocytic astrocytoma, pleomorphic xanthoastrocytoma and gangliocytoma.
Differential Diagnosis List: Intracranial ganglioglioma

Final Diagnosis: Intracranial ganglioglioma

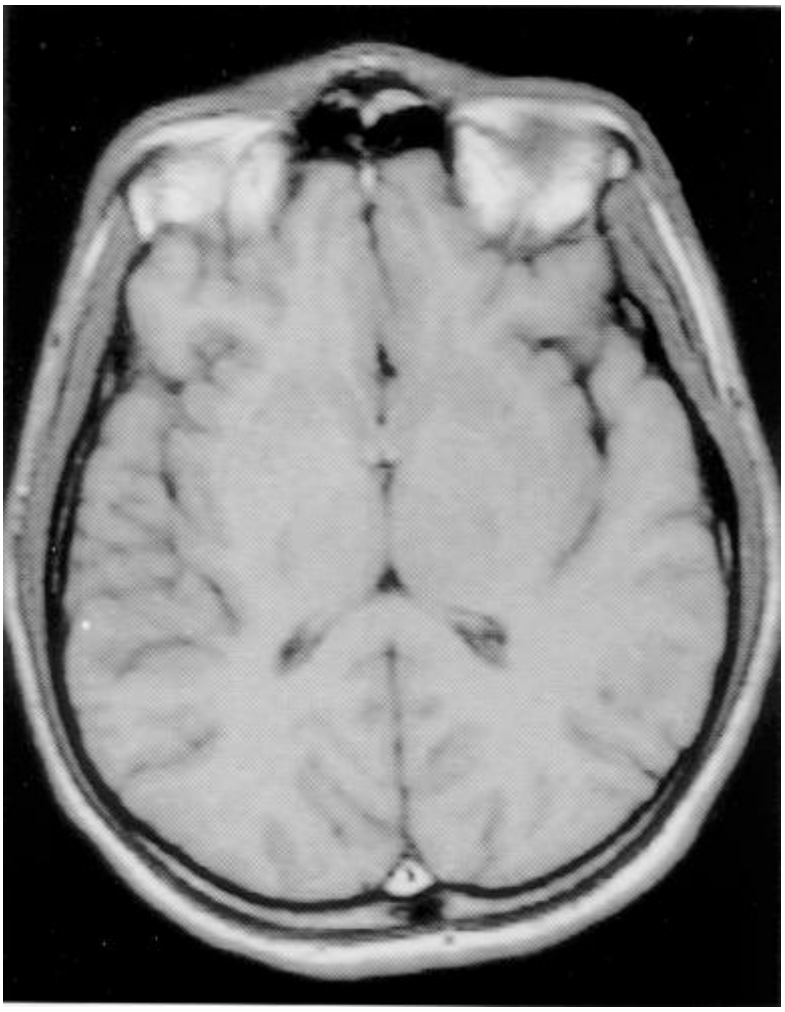
References:

Castillo M., Davis PC, Takei Y et al. Intracranial ganglioglioma: MR, CT and clinical findings in 18 patients. AJR

1990; 154: 607-612. (PMID: 2106228)
Tampieri D, Moumdjian R, Melanson D et al. Intracerebral gangliogliomas in patients with partial complex seizures: CT and MRI imaging findings. AJNR 1991; 12: 749-755. (PMID: 1882759)
Zentner J et al. Gangliogliomas: Clinical, radiological and Histopathological findings in 51 patients. J Neurol Neurosur PS 1994; 57: 1497-1502. (PMID: 7798980)

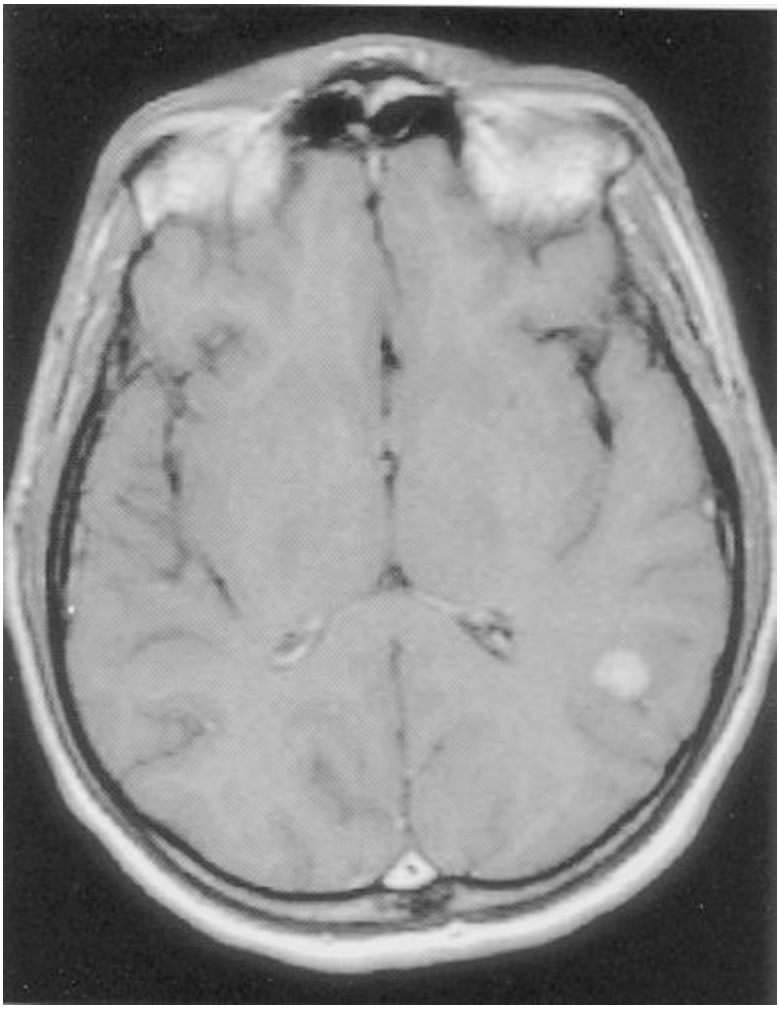
Figure 1

a



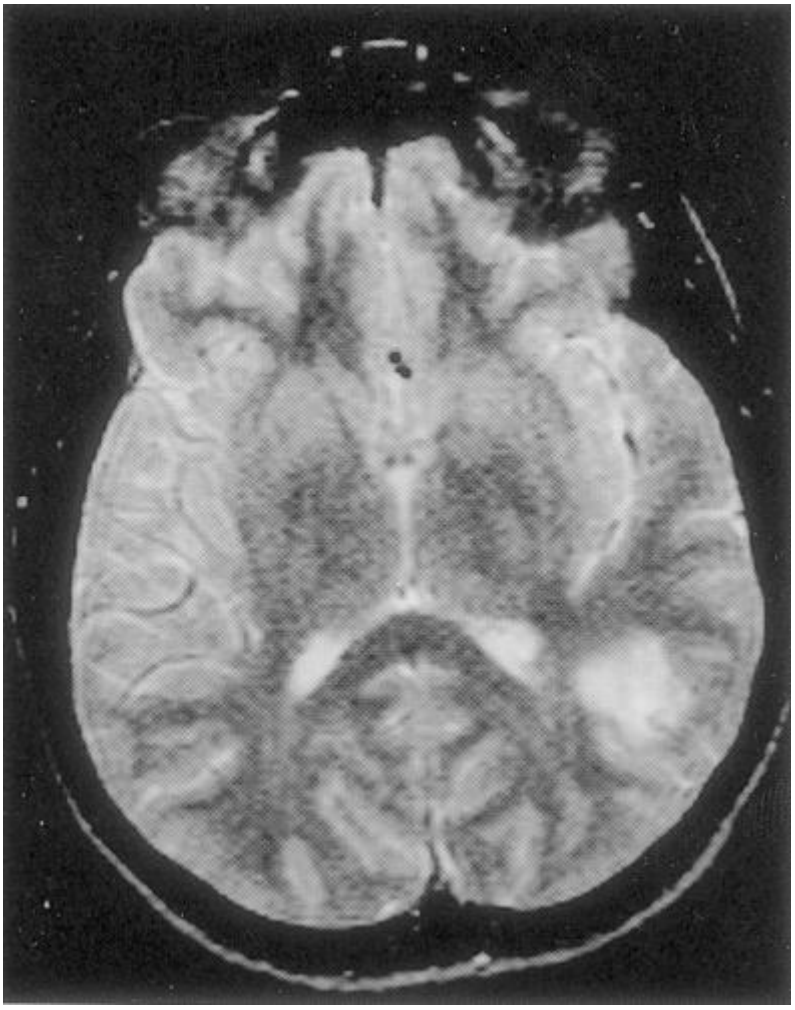
Description: Axial SE T1-weighted image: slightly hypointense white matter lesion in the posterior aspect of the left temporal lobe. **Origin:**

b



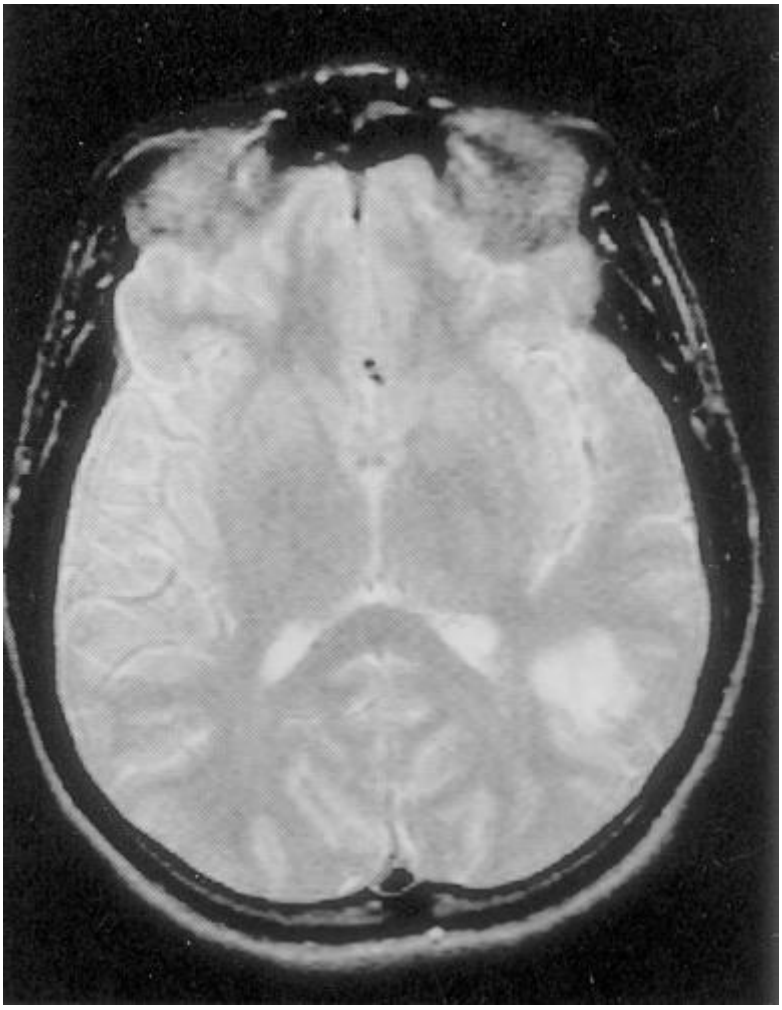
Description: Axial gadolinium-enhanced T1-weighted MR image : rounded, sharply demarcated mass with strong and uniform enhancement. **Origin:**

c



Description: Axial SE proton density MR images: subcortical location of the lesion and perifocal edema.
Origin:

d



Description: T2-weighted MR images: lesion is hyperdense with perifocal edema. **Origin:**