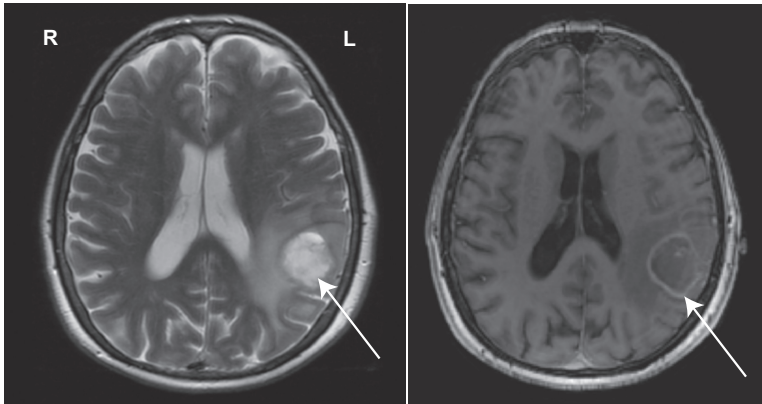


Case 30

A cerebral mass on magnetic resonance imaging



Axial T2 weighted image

IV Contrast (gadopentetic acid)

Figure 30.1

These are two images from a magnetic resonance (MR) scan series of a 45-year-old man who had complained of increasingly severe headaches over a couple of months, particularly worse in the morning. More recently he had started to vomit for no apparent reason, and had developed mild dysphasia.

Clinical examination revealed marked papilloedema on fundal examination and a mild right hemiparesis. Because of this, an urgent MR scan had been ordered.

Describe the lesion (which has been arrowed)

There is an irregular heterogeneous enhancing mass in the left parietal region on the axial T2-weighted image with surrounding oedema. The wall of the mass has taken up contrast. The lesion is solitary; this is in favour of a primary tumour since metastases in the brain – the commonest pathology of tumours of the central nervous system (CNS) – are usually multiple.

What effect is this having on the ventricular system?

The lateral ventricle is being compressed on the left, and the midline is displaced slightly to the right.

A needle biopsy, performed through a burr hole, confirmed that this was a poorly differentiated astrocytoma. From which cells does this tumour arise, and what proportion of brain tumours does it comprise?

Gliomas arise from the glial supporting cells. In fact, there are no tumours that derive from neurons themselves. Gliomas account for about 45% of tumours encountered in neurosurgical units. They are graded according to their degree of differentiation, with low grade lesions being grades I and II; anaplastic astrocytomas are grade III, while the high grade glioblastoma multiforme is grade IV. Low grade tumours have a better prognosis than the high grade glioblastomas. Secondary deposits in the brain (often from lung, breast, renal or melanoma primaries), are the commonest tumours of the CNS overall, but these patients do not generally come under the care of the neurosurgeon.

Where do intracranial tumours typically occur in children?

In the cerebellum, where the commonest histological type is the medulloblastoma.

What treatment is available for this patient and what is his likely prognosis?

Overall, prognosis is extremely bad in these large and poorly differentiated tumours. Small growths, less than 3 cm in diameter, may be suitable for stereotactic radio-surgery, the so-called 'gamma knife'. Larger tumours,

deemed operable, may be resected and this is usually followed by radiotherapy. In a large tumour, such as this, palliative radiotherapy is given which may be combined with surgical decompression. Cytotoxic drugs may confer additional benefit in some tumours, for example oligodendrogliomas.