midbrain, both cerebral peduncles, and the left thalamus, extending into the left internal capsule and globus pallidus. Microscopic examination showed a hypercellular, poorly differentiated proliferation, consistent with glioblastoma multiform. All cerebral vessels were free of atheroma. No ischaemic damage was found in brainstem structures.

This 70 year old man presented with signs of brainstem dysfunction, including diplopia, ataxia, and dysphagia, and progressed to the point that a presumptive diagnosis of basal artery insufficiency, secondary to progressive basilar artery thrombosis, was entertained. At necropsy, a primary malignant glioma of the brainstem was found. It was surmised that the tumour compressed the basilar artery, resulting in the radiographic abnormalities described.

We present this case to demonstrate how, in spite of radiographic and neuropathologic abnormalities, the correct diagnosis may be elusive in cases of brainstem ischaemia.

Kinkel, et al, reported several cases of cerebral ischaemic infarction, with local and distant enhancement on CT. Their description of the CT findings is similar to those in our case.

Nonvisualisation of the basilar artery on both venous angiography and contrast CT would normally be convincing evidence of basilar artery insufficiency but, in our case, it was of false localising value. Tumour progression has to be considered always in the differential diagnosis of progressive brainstem syndromes.

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Listeria encephalitis with intermittent symptoms and serological diagnosis

Sir: CNS infection with Listeria monocytogenes may be meningitic or encephalitic and typically presents with a history of several days headache, malaise, nausea, vomiting and fever, before the appearance of focal signs of CNS infection. These often reflect the brainstem involvement which characterises listera encephalitis both in humans and in ruminant animals among which it causes “circling disease”. In general these symptoms and signs persist until antibiotic treatment is given, and the condition is fatal in 30-40% of cases despite appropriate treatment. Two recent reports of listeria brainstem encephalitis in man highlight the importance of early diagnosis and treatment with high doses of intravenous ampicillin.

We report a case of Listeria monocytogenes encephalitis with intermittent symptoms and signs, diagnosed eventually on serological grounds. A 24 year old man was admitted to a district general hospital on 2 February 1986, with a 1 week history of mild headache which had become severe on the previous day. In the early hours of the day of admission, he woke complaining of loss of sensation over his tongue, became disorientated, and vomited. He had a fever of 38.6°C, confusion without meningeal signs or focal neurological signs, and a peripheral neutrophil leucocytosis; the CSF contained 67 x 10^6/l lymphocytes, normal glucose and an increased protein of 0.83 g/l. Though the provisional diagnosis was viral encephalitis he received one intravenous dose of ampicillin; he was transferred to Oxford on the following day. On arrival the patient felt fully recovered, was afebrile and had a normal CT scan. However, his EEG was asym
Letters

metric with pronounced slow wave activity on the left. This was judged compatible with a resolving encephalitis and he was allowed home. He was free of symptoms until 1 week later when he woke at 0330 hours with numbness over the left side of his face and left arm lasting a few hours. The following morning he woke at 0300 hours with similar sensory symptoms, a numb tongue, dysphasia and confusion. On re-admission on 12 February, 1986, blood and CSF results were abnormal as before. Two days later he woke in the early hours with headache, nausea and numbness of the left side of his face, and left arm, which also felt weak. The symptoms had resolved by the morning. Five days later he woke at 0300 with numbness of the tongue and right arm, and became tremulous and frightened. The numbness spread to his left arm and lips, and he became confused, dysarthric and dysphasic. He vomited, developing a fever of 37.4°C, tachycardia of 100, and a transient right facial weakness. This exacerbation lasted about 5 hours; on the following day he was exhausted but had no focal neurological signs. His peripheral leucocytosis persisted and the CSF findings were unchanged. Over the following month he had two further similar episodes. An indirect immuno-fluorescence test for listeria antibodies carried out on serial blood samples showed a rise in titre to serotype 4 antigen from a negative value of less than 16 on 3 February 1986 to a highly significant titre of 32 on 21 February 1986: a raised titre persisted in two further specimens. There was no rise in titre to serotype 1 antigen. On the basis of this result he was treated with intravenous ampicillin 12 g/day for 3 weeks. His peripheral leucocytosis and CSF abnormalities had returned to normal by the end of the course and he had had no further symptoms 10 weeks later. His EEG changes had largely resolved.

Our case has several features typical of listeria encephalitis: an initial period of vague malaise and headache, low grade fever with peripheral neutrophil leucocytosis, lymphocytic CSF, and symptoms of probable brainstem disturbance as well as of undoubted cortical disturbance. It is unusual in presenting with an intermittent clinical course, and in the serological mode of diagnosis.

Techniques for the serological diagnosis of listeria infections, including agglutination tests and CFTs have generally been regarded as of poor specificity. An indirect fluorescent antibody test using Listeria monocytogenes serotype 1 and 4 antigens has recently been developed in the Division of Microbiological Reagents and Quality Control, Central Public Health Laboratory, Colindale. Titres of 16 or more against serotype 4 are very uncommon in control subjects and are suggestive of listeriosis. It is important to treat this potentially fatal condition and the serological test may be of considerable value when investigating cases of atypical lymphocytic meningo-encephalitis.

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