LETTERS TO THE EDITOR

Carbamazepine in the treatment of generalised tonic clonic seizures in juvenile myoclonic epilepsy

Juvenile myoclonic epilepsy is characterised by bilateral myoclonic jerks on waking, and generalised tonic clonic seizures with onset in the mid-teens, which may be precipitated by sleep-deprivation in 33% of patients.1 Findings on EEG include bilateral spikes or multiple spike-slow wave discharges at 4-6 Hz with a normal background; about 30% of these patients show photopositivity or focal abnormalities, or both.2

A particularly good long-term prognosis exists if compliance with valproate, the drug of choice for the treatment of juvenile myoclonic epilepsy,2-4 continued. In the 8-20% of patients in whom full control cannot be achieved with valproate treatment alone, low doses of the second-line and interictal-valproate (400 mg/day, plasma concentration 34 μmol/l), only six having occurred in 13 years, were insufficient to control seizures. In the 14 years of his follow-up, the combination of valproate (1500 mg/day) and clonazepam (1.5 mg/day) was effective, clonazepam reducing the frequency of seizures. Although clonazepam was efficacious against the latter seizure types, the combination of the two drugs was necessary for full generalised tonic clonic seizure control. Interestingly, the patient and his family noted a reduced need for sleep, and the patient slept less than 8 hours per night after taking clonazepam.

These findings are consistent with the view that in juvenile myoclonic epilepsy, photopositivity and focal abnormalities may be important factors in the development of seizures. In this patient, the combination of valproate and clonazepam was effective in controlling seizures, and the patient was able to reduce his drug dosage to 750 mg/day.

In conclusion, these findings support the view that in juvenile myoclonic epilepsy, photopositivity and focal abnormalities may be important factors in the development of seizures. In this patient, the combination of valproate and clonazepam was effective in controlling seizures, and the patient was able to reduce his drug dosage to 750 mg/day.

C. KNOTT CP PANAYIOTOPoulos Department of Clinical Neurophysiology and Epilepsy, St Thomas’s Hospital, Lambeth Palace Road, London SE1 7EH, UK


coronary chordoma with a novel symptom

The case is described of a novel presentation of an adult with an intracranial chordoma. The patient was a 40-year-old man with a history of epilepsy, and a diagnosis of cerebrospinal fluid leak was made. Plain radiographs of the craniovertebral junction and neck were normal. Two months later he presented again, reporting that on flexing his neck on his shoulder he had noticed a new symptom: a sensation of something impinging on his neck. He was referred to the neurology department where imaging was requested.

These symptoms resolved within 30 seconds of sitting up or raising his head. He was referred to the neurology department where imaging was requested. Imaging revealed a large mass lesion in the cervical spine, with extension into the epidural space. The patient was subsequently referred to the surgical team for management.

After a few weeks his neck pain and the positional symptoms affecting his tongue resolved and were replaced by persistent dysphagia with difficulty in swallowing solids and liquids. He was unable to manipulate his tongue properly and was unable to speak. These symptoms resolved within 30 seconds of sitting up or raising his head. He was referred to the neurology department where imaging was requested. Imaging revealed a large mass lesion in the cervical spine, with extension into the epidural space. The patient was subsequently referred to the surgical team for management.

Enhanced CT and MRI showed a destructive mass lesion, thought to be a chordoma, extending from the clivus to the anterior margin of the foramen magnum. A transoral resection of the tumour was performed and complete clearance was felt to have been achieved. Histology showed the characteristic appearance of a chordoma, with anaplastic changes in the tumour. The patient made a good recovery after the operation, with some improvement of speech and swallowing. There was residual wasting and weakness of the tongue. Six months after the operation, he had regained the power of the sternocleidomastoid and neck extensor muscles and had almost returned to normal.

Correspondence to: Dr Knott, Department of Neurosurgery, the School of Medicine, University of London, 100 Tottenham Court Road, London WC1N 3BG, UK.


MRI showed a marked decrease in the bulk of the tumour from the original excision site, but extensive lateral extension along the floor of the skull base with encasement of the intrapetrous portion of the left internal carotid artery. Digital subtraction angiography with intravenous contrast showed a normal venous phase and the absence of vessel displacement or tumour circulation.

Using a posterolateral approach a further resection achieved a good macroscopic clearance apart from leaving some residual tumour in the cavernous sinus. The histology was identical to that of the sample taken at the first operation. Post-operatively there were left sided sixth and seventh cranial nerve palsies together with marked speech and swallowing difficulties. A feeding gastrostomy was required.

In spite of radiotherapy this neurological deficit has persisted and the left side of the patient's face has become numb. MRI one year after the second operation has shown extensive tumour recurrence affecting the clivus, extending anteriorly into the nasopharynx and posteriorly into the posterior fossa with compression of the medulla and cerebellum.

DISCUSSION

Skull base chordomas are rare tumours producing infiltrative destruction of bone. They are locally and widely invasive and the potential to cause a variety of cranial nerve palsies at anatomically unrelated sites. The cranial nerve most often affected is the sixth, followed by the ninth and tenth.

Isolated palsies are uncommon from any case. Chondroid chordomas may be the cause and exceptionally may arise within the hypoglossal canal. Inability of the patient to speak and to move the tongue on neck flexion is an unusual symptom which, as far as we are aware, has not been described previously in relation to intracranial chordomas. It is reminiscent of the neck-tongue syndrome in which afferent fibres from the lingual nerve travelling via the hypoglossal nerve to the second nerve (possibly the third) cervical root are compressed at the craniovertebral junction of the head movement. The neck-tongue syndrome is usually a benign disorder not associated with serious intracranial pathology. It causes unilateral numbness of the tongue on head movement and patients may have noticed that their tongue is being twisted sideways in their mouth. Dysarthria may accompany the hemiglossal sensory disturbance. Our patient had restricted tongue movement and an inability to speak without altered sensation, perhaps suggesting that on neck flexion the tumour compressed the hypoglossal nerve itself rather than the second and third cervical roots.

The operations were performed by Mr H A Crockard, to whom we are grateful for advice and encouragement in the preparation of this report.

SG KEOHANE
IF PYE

Department of Neurology, Leicester Royal Infirmary, Leicester

Correspondence to: Dr Pye, Department of Neurology, Leicester Royal Infirmary, Leicester LE1 5SW, UK.


Locked-in syndrome in fulminant demyelinating disease

The locked-in syndrome is a state of paralysis of all limbs and the lower cranial nerves, with preserved consciousness, vertical eye movements, and blinking. The pathological damage is usually located in the basis pontis of the ventral pons, the most common cause being infarction. Rarer causes include tumours, central pontine myelinolysis, pontine haemorrhage, and brain stem encephalitis. This report describes a fulminant first presentation of demyelinating disease with features of multiple sclerosis, which evolved within weeks into a fatal locked-in state. Pathological examination showed extensive demyelination of the ventral pons.

CASE HISTORY

A previously fit 50-year-old Spanish man developed slurred speech followed two days later by a mild weakness of his right arm and leg. Four days later he developed unsteadiness of his legs and two days later presented with bilateral cranial nerve palsies and diplopia in all directions of gaze, except the right lateral. There was mild pyramidal weakness of his right leg. His reflexes were brisk with extensor plantars and he had marked ataxia of the trunk and limbs.

Computed tomography showed a low density, non-enhancing area in the left rostral midbrain, with normal opacification of the basilar artery. His CSF was acellular, with normal protein and glucose; oligoclonal bands were absent. Routine haematological and biochemical tests, clotting studies, erythrocyte sedimentation rate, C reactive protein, and fasting lipids were normal. An autoantibody screen was negative. An ECG and chest radiograph were normal. A preliminary diagnosis of brain stem stroke-in-evolution was made, and he was anticoagulated intravenously with heparin. Subsequent vertebral angiography, however, was normal, and the heparin treatment was stopped. Visual evoked responses were bilaterally delayed. Despite the absence of oligoclonal bands in the CSF, the possibility of multiple sclerosis was considered, and high dose methylprednisolone was given for three days.

His initial response to steroids was good. The diplopia and ataxia improved. A right internuclear ophthalmoplegia was now apparent. Ten days after the end of the steroid treatment he developed complete transverse myelopathy with a sudden onset of flaccid paraplegia with areflexia and a sensory level to all modalities at T10. Myelography was normal and CSF protein, glucose, and cell count were also normal. Oligoclonal bands were again absent.

High dose steroids were restarted. MRI showed high signal lesions on T2-weighted images in the midbrain, cervical region, and parietal area, consistent with infarction or demyelination. One week later he developed weakness and sensory loss in the upper limbs, with acute aphonia and ventilatory failure requiring ventilation. He had a flaccid paresis of the arms with sensory disturbance to C5. Within 24 hours he had developed the locked-in syndrome with full consciousness, the only movements remaining being blinking and vertical eye movement.

He had a cardiac arrest and died 11 days after developing the locked-in syndrome.

PATHOLOGICAL EXAMINATION

Acute tracheobronchitis was found at necropsy. The brain was externally normal. No hemispheric or periventricular demyelinating lesions were seen. The midbrain and brain stem down to the lower medullary level were macroscopically abnormal. Externally, the pons and medulla were expanded and on dissection there was extensive discoloration and blurring of normal structures, with central granularity of texture. Sections stained with haematoxylin-eosin and luxol fast blue-cresyl violet showed sharply defined, irregular loss of myelin staining from the ventral half of the midbrain at the inferior collicular level (figure) to the ventral half of the pontine isthmus. Microscopic examination showed selective demyelination in the affected zone, which occupied the greater part of the pons and extended down into the medulla, the ventral two-thirds of which were affected. Axons were relatively spared and neurons and vessels were intact in the affected area; there was a marked cellular response affecting lymphocytes, macrophages, and astrocytes.

The spinal cord was almost entirely necrotic, with a loss of normal structure. Necrotising myelopathy affected all tissue elements. Ghost neurones were visible at some levels. Peripheral cord myelin was focally spared, as was myelin in the spinal nerve roots.

DISCUSSION

The case has been described of a patient with fulminant demyelination resulting in a fatal locked-in state, and with pathological evidence of extensive demyelination in the ventral pons.

Although the locked-in syndrome has been described previously in patients with multiple sclerosis, demyelination of the ventral portion of the brain stem was not present. Instead, demyelination was found in the internal capsule, cerebral peduncles, and tegmentum. Boor et al reported a patient with stepwise deterioration of lower brain stem dysfunction, similar to that described here, but without development of the locked-in state. The main clinical features of Boor et al's patient were bulbar weakness together with the failure of automatic respiration, which was shown...