Myasthenia gravis aggravated by pyrantel pamoate

Py rantel pamoate is an antihelmintic agent used worldwide. We report a worsening of myasthenia gravis by pyrantel pamoate in one patient.

In October 1989 a 72 year old diabetic man noticed mild intermittent palpebral ptosis when walking; he was blind in the right eye from diabetic retinopathy. In mid November of the same year, he complained of diarrhoea. A stool specimen was positive for Ascaris lumbricoides and a single 1000 mg dose of pyrantel pamoate was taken orally with breakfast on 26 November. Several hours later he became fatigued when chewing and also when walking. The following week he could not chew meat and bread and he noticed dysphonia. Neurological examination on 4 December showed bilateral palpebral ptosis with fatigability, limitation of abduction of both eyes and limitation of adduction of the right globe, hypophonia, weakness of neck extension and weakness of abduction of both arms.

Administration of 2 mg of edrophonium chloride reversed the ophthalmoparesis. Electrophysiological study revealed a normal area of compound muscle action potential in the right abductor digitii quinti muscle both at rest and after 15 seconds of maximal voluntary effort. Supramaximal repetitive stimulation of the right ulnar nerve at 3 Hz and 30 Hz were within normal limits.

Stimulation single fibre electromyography of the right extensor digitorum communis muscle showed a mean jitter of 40 μs (upper normal limit 25 μs) at 50% of insertions showing increased jitter and no blockings were found. Haematological and biochemical tests were normal. Antinuclear antibodies were positive at a 1/340 titre with an homogenous pattern. Anti-tissue transglutaminase antibodies were negative. Antismooth muscle and antimicrotubular antibodies were positive at a 1/80 titre. CT of the thorax was normal. Antiacetylcholine receptor antibodies were not determined.

He was treated with 180 mg day of pyridostigmine bromide without alleviation of his symptoms. There was no improvement in spite of increasing the daily dose of pyridostigmine and muscarinic symptoms appeared. Prednisone (20 mg day) treatment was started. Two weeks later he could tolerate solid food.

Dysphonia, weakness of neck extension and weakness of the extremities disappeared, but ophthalmoparesis persisted. From February 1990 the patient was in remission, 70 mg every other day, without neuromuscular symptoms apart from ptosis and bilateral ophthalmoparesis.

We feel that this patient, ingestion of pyrantel pamoate aggravated a previously existing myasthenia gravis. Pyrantel exerts its antihelminthic action by blocking the worm’s neuromuscular transmission, producing a depolarising-type neuromuscular block. In rabbits, parenteral administration leads to paralysis and death, but toxic neuromuscular effects in humans have not been reported to date to our knowledge.

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Myxo papillary ep endymomas arising from nerve roots of the spinal cord

Conventional pathogenesis suggests that myxo papillary ep endymomas arise from ependymal cells lying adjacent to fibrous tissue. The large majority of myxo papillary ep endymomas arise from the filum terminale where this arrangement applies. I report two cases of myxo papillary ep endymomas arising from nerve roots of the cauda equina. This unusual and so far unreported origin, may be due to myxo papillary ep endymomas arising directly from ependymal cells lying against the nerve roots.

Ependymomas form 2-6% of all gliomas. Myxo papillary ep endymomas belong to a distinctive subgroup of ep endymomas. They are virtually restricted to the cauda equina and the thought to originate from root terminale and conus medullaris. Myxopapillary ep endymomas (16%) 9/53 to (21%) 8/37 of intraspinal tumours (six and two respectively). The myxo papillary ep endymomas have a distinctive histological pattern of Antoni A and Antoni B fibrous tissue. Myxo papillary ep endymomas is related to ep endymal cells lying against fibrous tissue mainly the filum terminale.6 The pathogenesis of myxo papillary ep endymomas arising in such a setting is less clear.

The first case was a 48 year old man with a one month history of low back ache and left leg sciatica with dragging of his left foot. There was weakness of the left ankle dorsiflexion. Palpation of the left foot on the knee on the same side. Myelogram showed complete block at spinal level lumber 2. The second case was a 44 year old man who had experienced low back pain for three months and was unable to sit or lie down without discomfort. Myelogram revealed a block at spinal level thoracic 12.

Macroscopically these were large encapsulated tumours. Myxo papillary ep endymoma in case 1 arose from the first sacral root and in case 2 it arose from the second lumbar root. Treatment for both cases was excision of tumour and resection of the nerve root. Microscopically, these were discrete, rarely, in subcutaneous sacrococcygeal tissues (6), the lateral ventricle (12) and the cervico-thoracic cord.12 The pathogenesis for myxo papillary ep endymomas arising in such a setting is less clear.

otherwise they would occur more frequently. Furthermore, it has been shown in organ cultures of myxopapillary ependymomas originating in the filum terminale, that progressive perivascular sclerosis and hyalinisation is a feature of cultures over twenty days old.

The possibility of myxopapillary ependymomas arising from ependymal cells alone and not requiring contact with fibrous tissue becomes more feasible with the report of myxopapillary ependymomas arising from extra dural sacrococcygeal regions, the cervico-thoracic or the lateral ventricle and the nerve roots, as in this report.

I am grateful to Mr DG Hardy, Consultant Neurosurgeon, Addenbrookes Hospital and the Neurosurgery and Neuroradiology departments of Addenbrookes Hospital.

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Spinal extradural venous haemorrhage controlled by a drawing pin: a new technique in neurosurgery

Massive bleeding from venous plexuses can be a life threatening complication of surgery. This is well recognised from the cranial dural sinuses and is also common during rectal and prostatic surgery.

We describe a case of venous haemorrhage during the removal of a cervical meningioma which was controlled by an unusual technique.

A 64 year old man presented with a one year history of progressive paraesthesiae and numbness affecting both hands associated with clumsiness of fine hand movements and loss of coordination when walking. Examination showed mild spastic quadriplegia.

Myelography demonstrated an intradural extramedullary tumour extending from C1-C3 (fig). A C1-C3 laminectomy was performed in the prone position. The dura was opened and the meningioma identified. This proved to be extremely tough and could not be removed with an ultrasonic aspirator. It was therefore removed piecemeal with cutting loops and rongeurs.

There was considerable haemorrhage from arteriovenous shunts in the tumour bed and from the extradural venous plexus. The tumour had an en plaque origin and haemorrhage was controlled by diathermy, packing, local pressure and suction. These manoeuvres allowed 75% of the tumour to be removed resulting in decompression of the cervical cord.

At this stage it became increasingly difficult to stop the haemorrhage from the extradural venous plexus despite using all conventional haemostatic methods. The bleeding was staunched by continuous pressure exerted on patties and bone wax but the close proximity of the cervical cord prevented maintenance of pressure despite the use of suture buttresses. The patient had received a 30 unit transfusion becoming hypotensive for only a brief period.

The remaining haemorrhage was immediately and completely controlled by a drawing pin passed through the dura transfixing an extradural patty to the wall of the vertebral canal (fig). This provided permanent tamponade of the extradural venous plexus.

The wound was closed and the patient made an uneventful post operative recovery with significant improvement in his neurological condition and no wound infection.

Excluding the cranial dural sinuses there are three sites in the body with thin walled venous plexuses which are prone to bleed during surgery: the pre-sacral plexus, the prostatic plexus, and the spinal extradural venous plexus.

Once bleeding has started attempts at haemostasis often seem to provoke more oozing elsewhere.

Letters to the Editor

The use of drawing pins to tamponade venous plexuses to control bleeding is not a new idea. The method was first used in rural China to control life threatening haemorrhage during rectal operations. 1 Khan et al1 and Nivatvongs et al2 discuss four such cases. They describe the use of specially constructed titanium pins and add the cavities of possible reaction to the metal used or superadded infection. In our case an autoclaved statorian’s brass drawing pin was used to tamponade the extradural plexus. The risk of death or morbidity from continuing haemorrhage was felt to outweigh any possible complications either from the metal constituents of the pin or from subsequent infection. Prophylactic antibo-odies were used.

We describe this technique in the hope that other neurosurgeons may find it useful for the temporary or permanent control of haemorrhage or in situations where temporary dural fixation is impractical using standard methods.

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Figure Preoperative myelogram demonstrating intradural extramedullary defect and postoperative radiograph documenting drawing pin position.
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