

otherwise they would occur more frequently. Furthermore, it has been shown⁸ 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 cord, the lateral ventricle and the nerve roots, as in this report.

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

ANANT SHARMA
Addenbrooke's Hospital, Cambridge

Correspondence to: Dr Sharma, Royal Eye Unit, Kingston Hospital, Wolverson Avenue, Kingston upon Thames KT2 7QB, UK.

- Bale PM. Ependymal rests and subcutaneous sacrococcygeal ependymoma. *Pathology* 1980;12:237-43.
- Barone BM, Elvidge AR. Ependymomas. A clinical survey. *J Neurosurg* 1970;33:428-38.
- Helwig EB, Stern JB. Subcutaneous sacrococcygeal myxopapillary ependymoma. *Am J Clin Pathol* 1984;81:156-61.
- Matsuo K, Kumagai K, Kawai K, Tsuchiyama H. Subcutaneous sacrococcygeal myxopapillary ependymoma. A case report and review of the literature. *Acta Pathol Jpn* 1985;35(4):925-31.
- McKeran RO, Thomas DGT. The clinical study of gliomas. In: Thomas DGT, Graham DI eds. *Brain Tumours. Scientific basis, clinical investigation and current therapy*. London: Butterworths, 1980.
- Mork SJ, Loken AC. Ependymoma. A follow up study of 101 cases. *Cancer* 1977;40:907.
- Pulitzer DR, Martin PC, Collins PC, Ralph DR. Subcutaneous sacrococcygeal ('Myxopapillary') ependymal rests. *Am J Surg Pathol* 1988;12(9):672-7.
- Rawlinson DG, Rubinstein LJ, Herman MM. In vitro characteristics of a myxopapillary ependymoma of the filum terminale maintained in tissue and organ culture systems. *Acta Neuropath* 1974;27:185-200.
- Russell DS, Rubinstein LT. *Tumours of central neuroepithelial origin*. London: Butterworth, 1989.
- Rutherford GS, Adam AE, O'Rourke SO. Subcutaneous myxopapillary ependymoma. *Histopathology* 1987;11:218-20.
- Sato H, Ohmura K, Mizushima M, Ito J, Kuyama H. Myxopapillary ependymoma of the lateral ventricle. A study on the mechanism of its stromal change. *Acta Pathol Jpn* 1983;33(5):1017-25.
- Sonneland PRL, Scheithauer BW, Onofrio BM. A clinicopathologic and immunocytochemical study of 77 cases. *Cancer* 1985;56:883-93.
- Willis RA. *The borderland of embryology and pathology*. London: Butterworth, 1958.

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

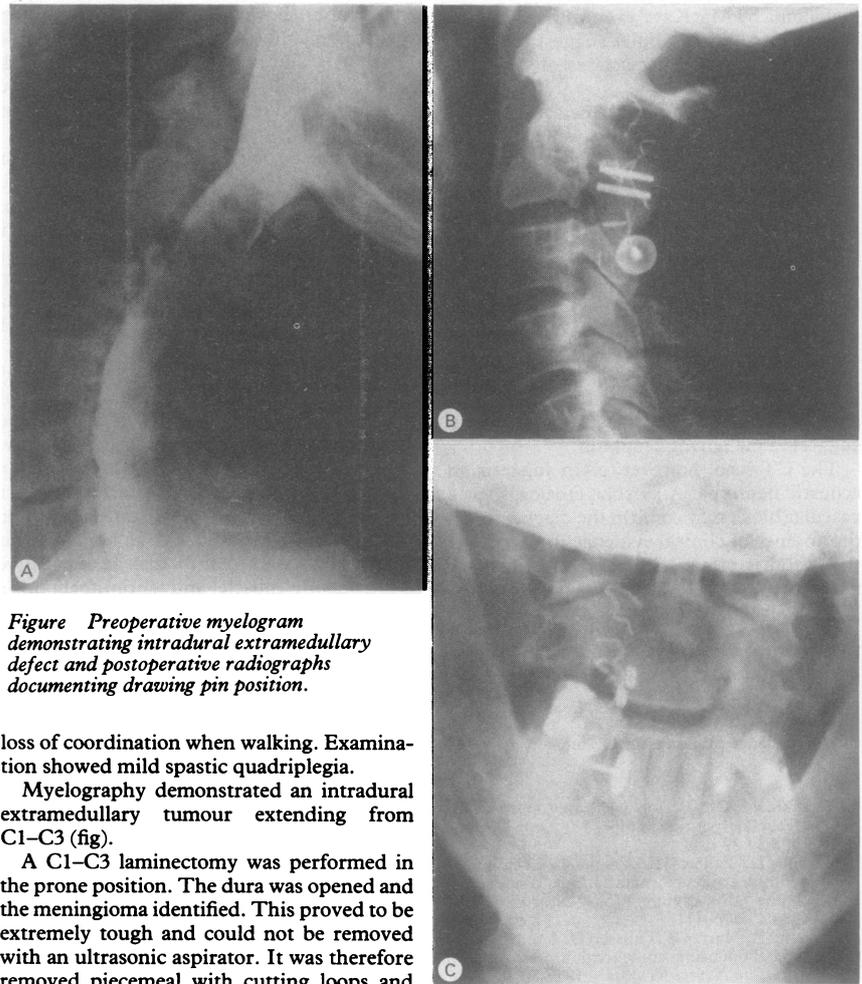


Figure Preoperative myelogram demonstrating intradural extramedullary defect and postoperative radiographs documenting drawing pin position.

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 arterialised veins 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 staunch by continuous pressure exerted on patties and bone wax but the close proximity of the cervical cord prevented permanent 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 pattie 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 haemorrhage elsewhere.

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 al*² and Nivatvongs *et al*³ discuss four such cases. They describe the use of specially constructed titanium pins and add the caveats of possible reaction to the metal used or superadded infection.

In our case an autoclaved stationer'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 antibiotics 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.

KM MORRIS
GFG FINDLAY
Mersey Regional Department of Medical
and Surgical Neurology,
Walton Hospital,
Liverpool, UK

Correspondence to: Mr Morris.

- Qinyao W, Weijin S, Youren Z, Wenqing Z, Zhengrui H. New concepts in severe presacral haemorrhage during proctectomy. *Arch Surg* 1988;120:1013-20.
- Khan FA, Fang DT, Nivatvongs S. Management of presacral bleeding during rectal resection. *Surg Gynaecol Obstet* 1987;165:275-6.
- Nivatvongs S, Fang DT. The use of thumbtacks to stop massive presacral haemorrhage. *Dis Colon Rectum* 1986;29:589-90.