

# Acute Presentation Of A Filum Terminale Ependymoma In A Geriatric Patient

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## Citation

J Li, T Mahasneh, D Al-Khawaja. *Acute Presentation Of A Filum Terminale Ependymoma In A Geriatric Patient*. The Internet Journal of Neurosurgery. 2013 Volume 9 Number 2.

## Abstract

Filum terminale ependymomas (FTE) commonly present insidiously and are uncommon among the geriatric population. We report here a rare case of spontaneous intratumoral haemorrhage from a FTE in an 80-year old patient. The initial symptomatology of acute back pain and lumbar radiculopathy mimicked the common emergency room presentation of acute lumbar disc herniation. The patient subsequently developed acute cauda equine syndrome necessitating urgent surgical intervention. We believe this is the first reported case of a contained intratumoral haemorrhage from a FTE in a patient of the geriatric age group. The case also illustrated the increasingly common encounter of the perioperative management of the non-reversible anticoagulant and antiplatelet agents in the context of emergency surgery.

## INTRODUCTION

Primary spinal cord tumours are a rare entity with an estimated incidence of 0.9 - 1.4 cases per 100,000.<sup>1</sup> The vast majority of spinal cord tumours in the adult population are ependymomas with a subset arising from the filum terminale and cauda equina.<sup>2,3</sup> These macroscopically are intradural extramedullary tumours enfolded by the cauda equina nerve roots.<sup>4</sup> FTE frequently present with a symptomatology that has a protracted time course. However cases of acute cauda equine syndrome caused by spontaneous haemorrhage from FTE have been reported in the literature.<sup>5</sup> Our case illustrate that haemorrhagic FTE can also occur in the geriatric population. Patient's in this age group often have co-morbid conditions that require anticoagulant and anti-platelet therapy with some anticoagulants lacking a reversal method or antidote. This presents a significant challenge for surgeons in balancing the risk of delaying emergency surgery balanced with the risk of perioperative bleeding.

## CASE REPORT

An 80-year-old woman presented with acute on chronic lower back pain with associated intractable unilateral radicular leg pain. Of concern was the complaint of intermittent bladder incontinence. Past medical history includes previous thrombotic cerebral vascular disease on lifelong thienopyridine antiplatelet therapy (clopidogrel 75 mg daily). On examination straight leg raise test was

positive bilaterally. Tone and power in her lower limbs were normal except for mild 4/5 weakness of ankle dorsiflexion. Deep tendon reflexes were present bilaterally and the plantar response was equivocal. There was no saddle region paresthesia or impaired sphincter tone. Lumbar spine magnetic resonance imaging revealed a solitary intradural extramedullary lesion measuring 2 x 1 x 1 cm occupying the ventral spinal canal at the level of L2-L3 with posterior compression of the cauda equina (Fig 1).

## Figure 1

(a) Sagittal T2-weighted MRI and (b) gadolinium-enhanced T1-weighted MRI showing the ventrally located intradural extramedullary tumour at L2-3.



Upon admission, clopidogrel was substituted with low

molecular weight heparin (enoxaparin 40 mg daily) for thromboprophylaxis. To minimize the risk of perioperative bleeding associated with clopidogrel use, a clinical decision was made to delay surgery until seven days after the cessation of clopidogrel provided her condition remained stable. Emergency surgery was expedited 6 days later due to worsened lower limb neurological status with new onset paraparesis and overt sphincter disturbance consistent with cauda equine syndrome. The patient underwent a L2-L3 laminectomy. Intraoperatively, the dura mater was visibly swollen and distended. Upon exposure of the encapsulated extramedullary lobulated tumor, xanthochromic fluid and small sequestrations of blood clot was found between the tumour and adjacent cystic arachnoid folds. The tumour was entirely extramedullary with a well-defined cleavage plane except for its attachment to the filum terminale. Using microsurgical technique a gross total resection of the tumour and the adhered filum was performed (Fig. 2). Histological analysis of the tumour showed perivascular pseudorosettes typical of low grade cellular ependymoma (WHO grade II) (Fig. 3). The patient had a favourable postoperative course with resolution of her radicular pain post surgery and a complete recovery of her gait and sphincter function was observed at the 3 month follow-up.

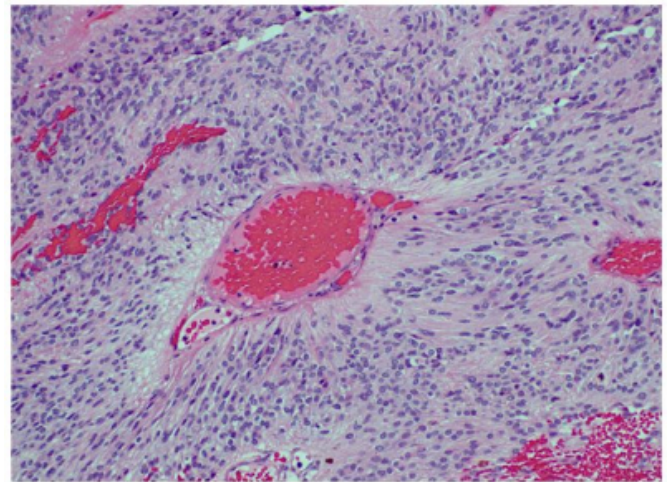
**Figure 2**

The 'en bloc' FTE specimen removed during surgery.



**Figure 3**

FTE specimen showed typical histological features of a cellular tumour with round to oval nuclei, and characteristic perivascular pseudorosettes. H&E, x50.



## DISCUSSION

The symptomatology of FTE can vary to mimic the common sciatic syndromes of herniated lumbar discs since FTE are found below the level of conus medullaris potentially giving rise to the loss of function to a combination of the 18 nerve roots resulting in cauda equina syndrome.<sup>6</sup> The symptomatology of the time-course of FTE tend to be insidious often with a prolonged history. On occasion, patients with FTE can present with acute deterioration when there is associated subarachnoid tumoral haemorrhage or intratumoral haemorrhage.<sup>3</sup> FTE are uncommon in the geriatric population with the median age of diagnosis of histologically proven FTE being in the third and fourth decades.<sup>7</sup> To our knowledge, this is the first reported case of spontaneous haemorrhage from a FTE in a geriatric patient.

According to the World Health Organisation (WHO) classification, virtually all spinal cord ependymomas and FTE are classified as either grade I or grade II with the majority of FTE being the myxopapillary subtype (grade I).<sup>4,8</sup> Both grade I and grade II FTE tend to have similar clinical and biological course with a potential for local recurrence and cerebrospinal fluid metastasis.<sup>9</sup> Early surgical resection is the mainstay treatment for spinal ependymomas given that complete gross total resection substantially reduces the incidence of recurrence and can lead to a permanent cure.<sup>8,10</sup>

The vascular morphology of ependymomas together with the fragility of their thin-walled vessel can predispose these

tumours to bleeding.<sup>4</sup> The ictus responsible for our patient's acute presentation may be due to an initial episode of contained intratumoral haemorrhage. It remains unknown whether the use of antiplatelet agents increased the risk of micro-haemorrhages within these tumours. We postulate that elderly patients are at a high risk of neurological compromise following a haemorrhage from FTE due to the combination of the higher prevalence of degenerative lumbar canal stenosis, loss of epidural fat and calcification of the ligamentum flavum that is associated with ageing. In our case, the onset of cauda equina syndrome in our patient was likely due to further intratumoral bleeding. The timing of the emergency surgery coincided with clopidogrel being withheld for 6 days, which minimised the risk of intra-operative and per-operative bleeding complications. Minor bleeds for intraspinal and intracranial procedures can be catastrophic and therefore are often intolerable. The current standard recommendation to minimize bleeding risk associated with clopidogrel is to discontinue its use for at least 5 days prior to surgery.<sup>11</sup>

### CONCLUSION

FTE are rare in the geriatric population. The presentation of a haemorrhagic FTE in a geriatric patient can present as both a diagnostic and therapeutic challenge. Their variable symptomatology can easily be mistaken as other conditions such as an acute lumbar disc herniation and the pre-operative reversal of anti-platelet or warfarin coagulopathy is often

encountered in the management of the surgical geriatric patient.

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