Posttraumatic intratumoural haemorrhage: an unusual presentation of spinal ependymoma

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Received: 30 May 2006 / Revised: 18 December 2006 / Accepted: 31 December 2006 / Published online: 19 January 2007
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Abstract Ependymomas presenting with intratumoural and/or subarachnoid haemorrhages are seen rarely. These haemorrhages are mostly due to anticoagulation, epidural analgesia or pregnancy. A 62-year-old male farmer with cauda equina syndrome after a work-related trauma is presented. He was admitted to our hospital with paraparesis, faecal incontinence and sensory loss below the level of the lumbar-2 dermatome. Magnetic resonance imaging of the spine displayed an intradural mass lesion at the level of the first lumbar vertebrae. The lesion was excised totally via dorsal midline approach. Histopathologic examination revealed grade-3 ependymoma with intratumoural haemorrhage. The patient's symptoms were relieved completely on postoperative day 7. The patient was given information about periodical examination for recurrence and discharged on the third postoperative week. Asymptomatic spinal lesions should be considered for operation whenever detected because of unpredicted complications.

Keywords Cauda equina syndrome · Ependymoma · Filum terminale · Intratumoural haemorrhage · Spinal cord tumours · Spinal trauma

Introduction

A majority of ependymomas located in the filum terminale are of the myxopapillary type, and the anaplastic type is seen very rarely [2, 4]. They seldom present with spontaneous haemorrhage and related symptoms. We present a patient with acute cauda equina syndrome after a work-related trauma. The patient was operated urgently after the diagnosis of a spinal intradural-extramedullary mass, and complete excision resulted in full recovery.

Case report

A 62-year-old male farmer was admitted to our hospital with acute paraparesis (right 3/5 and left 4/5), numbness below the lumbar 1–2 dermatome and faecal incontinence after a work-related motor vehicle injury. Prior to the trauma, he had no neurological symptoms. X-rays showed left humerus fracture and traumatic subluxation of the right knee. Magnetic resonance imaging of the spinal column displayed a well-demarcated mass lesion located intradurally behind the first lumbar vertebra (Fig. 1). The lesion was isointense on T1-weighted images and heterogeneous on T2-weighted and gradient-echo (flip angle 25°) images. The patient was operated urgently via dorsal midline approach 6 h after the trauma. Intraoperatively, no epidural or subdural haemorrhage was observed. A grey-yellowish soft haemorrhagic mass lesion (Fig. 2) loosely attached to the caudal rootlets was detected and easily dissected from the rootlets and excised totally. On postoperative day 7, the patient's symptoms recovered completely. Pathological examination of the

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Fig. 1 A well-demarcated intradural-extramedullary mass lesion at the level of the first lumbar vertebra was observed on gradient-echo (flip angle 25°) magnetic resonance images

specimen revealed a vascular tumour structure with congestion and bleeding and marked atypia, confirming the diagnosis of grade-3 ependymoma (Fig. 3a, b). The patient was given information about periodical

Fig. 2 A haemorrhagic soft tumour with the dimensions of 2.5 × 3.5 cm was excised from the intradural-extramedullary compartment

examination for recurrence and discharged on the third postoperative week.

Discussion

Ependymomas located in the filum terminale and cauda equina are virtually of the myxopapillary type, and the anaplastic type is seldom observed (myxopapillary 82%, epithelial 14%, anaplastic 4%) [2, 5]. The clinical course is typical with low back pain, paresthesias or sciatalgia. In addition to these symptoms, spontaneous subarachnoid and intratumoural haemorrhages are mainly confined to the myxopapillary type and seen infrequently [1, 3, 4]. The main

Fig. 3 Histopathological examination of the specimen showed **a** vascular tumour structure with congestion and bleeding (×40, H&E) and **b** marked atypia (×200, H&E)

reason for these types of haemorrhages is the relatively more vascular structure of myxopapillary ependymomas.

However, there are other predisposing factors for spontaneous haemorrhages such as pregnancy, recent epidural anaesthesia or anticoagulation [3, 4]. The treatment of choice is total excision of the tumour when possible. Celli et al. [2] reported that neurological deficits improved after total removal in 79% and after partial removal with or without radiotherapy in 63% of the patients.

Additionally, recurrence rate was 4% with total excision and 28% with partial removal plus radiotherapy. The type of the ependymoma and the infiltration to adjacent structures are the other factors that affect prognosis [2]. Unlike the previous reports, in our case, intratumoural haemorrhage occurred posttraumatically and, interestingly, of the anaplastic type. Although our patient had no neurological deficits before the trauma, it was possible that a certain amount of neural compression had already existed. For that reason, posttraumatic intratumoural haemorrhage aggravated the compression and caused acute neurological compromise. Due to loose connection of the tumour with adjacent neural elements, total excision was achieved;

we decided to follow the patient without radiation therapy. We conclude that urgent intervention for symptomatic lesions results in good recovery and, additionally, asymptomatic ependymoma should be considered for operation whenever detected due to its unpredictable complications.

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