spinal intradural location granular cell tumors were document since the first description in this location in 1926. We report a patient with intraspinal granular cell tumor with detailed MRI findings.

A 16-year girl presented with progressive back, thoraco-lumbar, pain of 40 days duration. Following lumber puncture, she developed increased numbness, weakness, and paraesthesia in both the lower limbs. She had good health before this illness. Neurologic examination showed decreased superficial sensations in both the lower limbs below first lumbar dermatome and the motor power was graded at 4/5. Magnetic resonance imaging (MRI) of the spine was performed with a 3.0T scanner. The MRI sequences studied included sagittal T1-weighted (TR 600 ms, TE 12 ms slice thickness 4 mm), turbo spin-echo T2-weighted (TR 3800 ms, TE 113 ms, slice thickness 4 mm) and axial T2-weighted (TR 3850 ms, TE 106 ms, slice thickness 8 mm) sequence without fat saturation. A T1-weighted axial, sagittal, and coronal scan were repeated after intravenous administration of paramagnetic contrast media. The MRI showed an irregular $10 \times 21 \times 7$ mm$^3$ mass located in the subdural space at the T11-T12 level. The lesion was isointense on T1-weighted images and was hypointense on T2-weighted images. No perilesional edema was seen in the adjacent marrow. The neighboring marrow was compressed without an abnormal signal. On post-contrast imaging, it showed markedly heterogeneous enhancement [Figure 1a-c].

During the operation, the tumor revealed a single nodule and was sharply-edged in the subarachnoid space. It was conglutinated with the coccygeal nerve and arachnoid membrane. It was fragile in consistency and yellow in color with moderate blood supply. Light microscopy features: Densely cellular tumor composed of cells with small dark nuclei and abundant granular cytoplasm. Special stain indicated that CD68, Vimentin, and NSE were positive, and Chromogranin was negative [Figure 2].

Granular cell tumors in the central nervous system (CNS) was reported in the spinal intradural location$^{2,3}$ and in the neurohypophysis and pituitary stalk, about 50 cases since the first documentation in 1893.$^4$ The cell of origin is controversial. Some investigators suggested that CNS granular cell tumors derive from schwann cells, however, others insisted that the cell of origin for neurohypophyseal granular cell tumors is the pituicyte, which is a modified astrocyte.$^{4,5}$ Lee et al., suggested that granular cell tumors derive not only from schwann cells but also degenerated normal cells and tumor cells.$^{10}$ The growth characteristics of granular cell tumors outside of the CNS are variable. Most reports have emphasized their benign nature while several others have described it as a malignant

**Subdural granular cell tumor in thoracic vertebral canal**

Sir,

Granular cell tumors have been reported in different locations such as skin, subcutaneous tissue, gastrointestinal tract, and intrathoracic.$^1$ However, spinal location was extremely rare, only two cases of
Letters to Editor

In the absence of calcification, it is difficult to distinguish meningioma from a granular cell tumor. Typical features of the nerve sheath tumor is a dumbbell-shaped lesion with both intraforaminal and extraforaminal components. However, when nerve sheath tumors show a solitary lesion, it is also impossible to be distinguished from a granular cell tumor.

There have been case reports of granular cell tumors occurring during pregnancy and hyperestrogenic states.[12,13] Our patient was a girl, however we had not done estrogen levels in her.

Jinrong Qu, Jun Ma, Lin Luo¹, Lin Ai, Shaowu Li, Jianping Dai

Departments of Neuroradiology and ¹Pathology, Beijing Tiantan Hospital, Capital Medical University, Beijing, China.

E-mail: qjrqq@yahoo.com.cn

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Granular cell tumor in the subdural space should be differentiated from meningioma and schwannoma. In the absence of calcification, it is difficult to distinguish meningioma from a granular cell tumor. Typical features of the nerve sheath tumor is a dumbbell-shaped lesion with both intraforaminal and extraforaminal components. However, when nerve sheath tumors show a solitary lesion, it is also impossible to be distinguished from a granular cell tumor.

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Sir,

Postoperative hemorrhage is a well-known complication following intracranial surgery, and usually results from inadequate hemostasis. Remote site hemorrhage i.e., hemorrhage occurring at a distant site away from the site of craniotomy, is relatively rare and may occasionally cause significant morbidity or even death. [1-3] Only a few cases of infratentorial hemorrhage following supratentorial surgery were reported,[4-6] and those following surgery for traumatic brain injury (TBI), are a rarity. We report a case of infratentorial hematoma following ipsilateral decompressive hemicraniectomy for traumatic acute subdural hematomas in a 40 year-old male with severe TBI.

A 40-year-old male patient was brought to Emergency Department (ED) in an unconscious state with alleged history of road traffic accident. Patient was immediately intubated in the ED and his postresuscitation Glasgow Coma Scale (GCS) score was E1V2M5. Pupils bilaterally were of normal size, sluggishly reacting to light. Systemic examination did not reveal any associated orthopedic or abdominal solid organ injury. Focused abdominal sonogram for trauma (FAST) was also negative. Urgent noncontrast computed tomography (NCCT) head revealed right fronto-tempero-parietal acute subdural hematoma (SDH) with mass effect and significant midline shift to the left side [Figure 1]. He was immediately taken up for emergency surgery. Large right fronto-tempero-parietal decompressive craniectomy was done, SDH was evacuated and lax duraplasty was done using pericranial graft. Three hours after surgery when the patient did not reverse from the effect of anesthesia, we got a CT head repeated which revealed a large right cerebellar hemorrhage with mass effect over fourth ventricle with upstream hydrocephalus [Figure 2]. Coagulation parameters were normal, both pre- and postoperatively. Patient had been operated in supine position on a horse-shoe headrest. No three-point fixator was used for head-holding during the operative procedure. There was no history of trauma to head during shifting. Urgent external ventricular drainage (EVD) was done at the bedside to relieve hydrocephalus. However, patient became brain-dead before definitive surgery could be offered and expired a day later.

Remote site intracranial hemorrhage is an extremely rare complication of intracranial surgery.[1,2] The complication has been reported following tumor excision [2] and also following evacuation of chronic subdural hematoma. [3] Figure 1: Right fronto-parietal acute subdural hematoma with mass effect and midline shift to left side

References


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