tradural extension was seen in two patients.

On MRI about 75% of ganglioneuromas are isointense and 25% are hypointense on T1 images. Most of them are hyperintense on T2 images. The non-homogeneous appearance corresponds to areas of cystic degeneration, hemorrhage or necrotic degeneration.^[4,5]

Ganglioneuromas are well encapsulated tumors and can be completely excised. Even when they are intradural, the tumor could be removed without cord injury because they are not adherent to the spinal cord.^[1] This and previously reported cases indicate that spinal ganglioneuromas could be completely removed and cured.

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References

- Kyoshima K, Sakai K, Kanaji M, Oikawa S, Kobayashi S, Sato A, Nakayama J. Symmetric dumbbell ganglioneuromas of bilateral C2 and C3 roots with intradural extension associated with von Reeklinghausen's disease: case report. Surg Neurol 2004;61:468-73
- Maggi G, Dorato P, Trischitta V, Varone A, Civetta F. Cervical dumbbell ganglioneuroma in an eighteen month old child. A case report. J Neurosurg Sci 1995;39:257-60
- Ugarriza LF, Cabezudo JM, Ramirez JM, Lorenzana LM, Porras LF. Bilateral and symmetric C1-C2 dummbell ganglioneuromas producing severe spinal cord compression. Surg Neurol 2001;55:228-31
- Ichikawa T, Ohtomo K, Araki T, Fujimoto H, Nemoto K, Nanbu A, Onoue M, Aoki K. Ganglioneuroma: Computed tomography and magnetic resonance features. Br J Radiol 1996;69:114-21
- Lonergan GJ, Schwab CM, Suarez ES, Carlson CL. Neuroblastoma, ganglioneuroblastoma, and ganglioneuroma: radiologic-pathologic correlation. Radiographics 2002;22:911-34

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Multicentric glioma presenting as man-in-the-barrel syndrome

Sir,

Primary motor cortex is somatotopically organized, and the motor representation in the precentral gyrus forms a motor homunculus – the leg and perineum is represented over the medial aspect of the motor strip, and the arm and the hand over the convexity. It is well known that precise and circumscribed weakness may affect one limb only if the appropriate area of the motor cortex or its projection pathway is selectively damaged.^[1]

Bilateral upper limb weakness with relative sparing of lower limbs is usually seen in lesions involving the medullary decussation of the pyramidal tracts, or cervical spinal cord. Such a clinical syndrome due to lesions occurring bilaterally in the motor cortex is a rare event. These bilateral cortical lesions producing brachial diplegia are usually infarcts secondary to cerebral hypoperfusion following shock or aortic surgery. Cerebral tumor causing such paralysis is extremely rare.

A 37-year-old Nepalese national was admitted with sevenweek history of gradually progressive worsening weakness of both arms. Weakness involved predominantly the shoulders, elbows and to a lesser extent, the wrist movements. Hands were relatively spared. He was unable to raise his arms or flex his elbows. He had remained ambulatory, continent, seizurefree, with no visual or gait disturbances. For two days prior to admission, he had complained of dull, generalized headache accompanied by one episode of vomiting.

Clinical examination revealed well-built and nourished normotensive male, with no abnormality of higher mental functions. Funduscopy revealed early bilateral papilledema. There was no nystagmus or involvement of facial or of lower cranial nerves. Motor system examination revealed power in both deltoids to be grade 0/5, that in elbow flexors 1/5 with wasting of deltoids. Tone was increased in both upper limbs with brisk biceps and triceps jerks. No fasciculations were observed. There was no sensory impairment. MRI brain showed bilateral frontal convexity space occupying lesions with surrounding edema [Figure 1].

After initial treatment with cerebral decongestants and dexamethasone, the right sided tumor was excised by craniotomy, while the left sided tumor was biopsied stereotactically at a later date. Histopathology of the excised specimen confirmed both the tumors to be glioblastoma multiforme.

The syndrome of disproportionate weakness of the upper

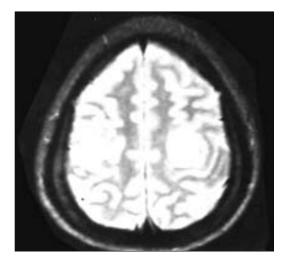


Figure 1: MRI brain showing bilateral frontal convexity space occupying lesions with surrounding edema

limbs versus the lower extremities (cruciate palsy, brachial diplegia) is seen in the traumatic central cord syndrome or cervical spondylotic myelopathy of elderly patients². Brachial diplegia due to pyramidal tract involvement was first described by Mohr^[3], while the term man-in-the-barrel syndrome (MIBS) was coined by Sage and Van Clitert^[4] to describe the clinical aspect of the patient with disproportionate weakness of both arms, while maintaining mobility of face and lower limbs (as though the trunk of the patient is stuck on a barrel). The term cruciate palsy is best used for lesion of corticospinal tracts in the medulla, while exclusive use of the term MIBS for bilateral frontal lobar lesions as in the original description would provide more clarity to the terminology^[5]. MIBS is seen commonly after cardiac tamponade, aortic surgery^[5], systemic hypoperfusion and hypovolaemic shock^[6], head injury^[7], anoxic damage to the cortex^[8] in the area of somatotopic representation of the arms. There is only one report of tumors being responsible for MIBS – that due to cerebral metastases from undifferentiated carcinoma lung^[9]. Multicentric glioma presenting as MIBS has not been reported earlier.

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Reference

- 1. Haymaker W, Schiller F. Motor, sensory, reflex and related disturbances of cerebral cortical and subcortical origin. In: Haymaker W (ed). Bing's Local Diagnosis in Neurological Diseases. The CV Mosby Company. St Louis. 1969: pp 329-48
- 2.Levi ADO, Tator CH, Bunge RP. Clinical syndromes associated with disproportionate weakness of the upper versus the lower extremities after cervical spinal cord injury. Neurosurgery 1996; 38:179-185. Mohr JP. Distal field infarction. Neurology 1962; 12:279.
- 3
- 4. Sage JI, Van Clitert RL. Man-in-the-barrel syndrome. Neurology 1986; 36: 1102-3
- Georgiadis D, Schulte-Mattler WJ. Cruciate paralysis or man-in-the-barrel syn-5. drome? Report of a case of brachial diplegia. Acta Neurol Scand 2002; 105:337-40.
- Clerget L, Lenfant F, Roy H, et al. Man-in-the-barrel syndrome after 6. hemorrhagic shock. J Trauma 2003; 54: 183-6.
- Cristomo EA, Suslavich FJ. Man-in-the-barrel syndrome associated with closed 7. head injury. J Neuroimag 1994; 4:116-7.
- Elting JW, Haaxma R, Sulter G, DeKeyser J. Predicting outcome from coma: 8. Man-in-the-barrel syndrome as potential pitfall. Clin Neurol Neurosurg 2000; $102 \cdot 23-5$
- 9 Moore AP, Humphrey PRD. Man-in-the-barrel syndrome caused by cerebral metastases. Neurology 1989; 39:1134-5.

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