Hypoparathyroidism

Sir,

A 20-year-old female presented with seizures, spasmodic contractions and paresthesia of limbs of the left side and atactic gait of 3 years duration. Carpopedal spasm was present. Trousseau's and Chovstek's signs were positive. Cerebellar signs were positive. Biochemical analysis revealed hypocalcemia (1.3 mmol/L; normal range 2.10–2.60 mmol/L), hyperphosphatemia (2.5 mmol/L; normal range 0.8–1.5 mmol/L) and low Parathyroid hormone level (0.6 pmol/L; normal range 1.5–7.6 pmol/L). Imaging revealed intracranial calcification. Hypocalcemia results in increased neuromuscular excitability, which manifests as tetany, paresthesia, seizures, organic brain syndrome or calcium deposition leading to cataract or intracranial calcification. Supplementation with calcium and 1,25-dihydroxy vitamin D is helpful in preventing seizures and progression to extrapyramidal disorders.[1,2]

Idiopathic hypoparathyroidism is an infrequent condition of unknown etiology. Accepted criteria for its diagnosis are (a) low serum calcium, (b) high serum inorganic phosphates and (c) exclusion of renal insufficiency, steatorrhea, chronic diarrhea, alkalosis and rickets and osteomalacia. The classic findings in a patient with hypoparathyroidism are a rounded expressionless face, a shorter height than average and cataract. Dental hypoplasia and aplasia develop depending upon the age at the time of onset of the disease. In idiopathic hypoparathyroidism, basal ganglia calcification and extrapyramidal syndromes are more frequently seen, and symptoms are earlier in onset. In pseudohypoparathyroidism, there is ineffective parathormone action rather than a failure of parathyroid hormone production. However, it shares several clinical features with hypoparathyroidism.[3]

Hypocalcemia increases the neuromuscular excitability, which may result in tetany. Lower degrees of neuromuscular excitability may lead to latent tetany, which can be elicited by Chovstek’s and Trousseau’s signs. Chovstek’s sign is demonstrated by tapping the skin over the facial nerve anterior to the external auditory meatus, and results in ipsilateral contraction of the facial muscles. Trousseau’s sign is produced by inflating a sphygmomanometer to 20 mmHg above the systolic blood pressure for 3–5 min, which results in ischemia of nerves in the upper arm leading to thumb adduction, metacarpophalangeal joint flexion and interphalangeal joint extension.[1,3]

**Figure 1:** (a) Axial T 1 weighted magnetic resonance image showing symmetrical hyperintensities in the bilateral basal ganglia. (b) Computed tomography (CT) image of the same patient showing evidence of calcification in the basal ganglia. (c) Axial T1 weighted image showing symmetric hyperintense signal in bilateral dentate nuclei, which also showed evidence of calcification in CT sections.

---

**Paramdeep Singh, Kavita Saggar, Parambir Sandhu**  
Department of Radiodiagnosis, Dayanand Medical College and Hospital, Ludhiana, Punjab, India

**Address for correspondence:** Dr. Paramdeep Singh,  
E-mail: paramdeepdoctor@gmail.com
Limited unilateral partial laminectomy and lateral dural incision: One of the best approaches for spinal meningioma in selected cases

Sir,

Meningioma is second most common intra spinal tumor, accounting for 25-46% of all spinal canal tumors. In most of the patients, tumor is located in extramedullary-intradural compartment. It is situated predominantly either laterally (58%) or anteriorly (18%) compared to posteriorly (24%), in spinal canal. Generally, spinal meningiomas are less vascular and their incidence is high in late middle to elderly group females between the fifth and seventh decades of life, with a female-to-male ratio of 4.3 to 1.

Traditionally, spinal meningiomas are approached by a wide multilevel laminectomy and a midline dural incision. A wide multilevel laminectomy may cause instability, subsequent progressive kyphosis in the future, soft tissue injury and dural scarring which may cause significant post-operative pain, long hospital stay, and progressive neurological deterioration. In elderly females, bones are generally osteoporotic, which further complicates the situation. Midline dural incision for a laterally or anteriorly placed lesion unnecessarily exposes the entire dorsal surface of the spinal cord. This can increase the risk of inadvertent damage to the cord due to retraction of the cord directly by dural or arachnoid stay stitch for visualization of anteriorly or laterally placed meningioma. Indirect injury to unnecessarily exposed cord by instruments and excessive use of cautery to control bleeding, can lead to vascular compromise of the cord.

A wide multilevel bilateral laminectomy also may cause intra-operative excessive blood loss. Limited unilateral partial laminectomy and laterally placed dural incision entails bone removal, which is limited to the lateral half of the lamina on the side of the tumor and may or may not include the medial part of the facet joint. A lateral dural flap exposes the tumor without exposing the cord and can solve above problem and provides excellent results. It is advantageous over the conventional approach in being less invasive, less blood loss, reduced chances of instability, deformity and neurological deterioration, post-operative excessive pain, longer hospital stay and hospital expenses. Use of this approach allows direct access to anteriorly or laterally placed meningiomas without cord or root retraction, and with little disturbance to the normal anatomy. If required, the spinal cord may be displaced laterally very easily and safely by interrupting the dentate ligaments to reach anteriorly. Additional advantages are misjudged level in limited laminectomy can be extended without much risk of instability or deformity and lesser risk of cord or nerve root injury due to post-operative changes in re-operations. Multilevel laminectomies may be replaced by multilevel laminotomies with laminoplasties at the end of the operation to avoid spinal deformities. Some surgeons have found difficulty in this technique in obese patients due to poor visualization in depth and it can be solved by using a microsurgical mirror or endoscope for better view to remove residual tumor.

After reviewing articles over spinal meningioma surgical approaches, it is one of the less invasive and good surgical approach for management of selective cases of spinal meningiomas (anteriorly or laterally located) with lesser complication rate and excellent postoperative results.

Manish Singh, Goutham Cugati1, Ajai Kumar Singh2, Pratibha Singh3
Departments of Neurosurgery, JIPMER, Puducherry, 1Voluntary Health Services, Adyar, Chennai, 2Neurology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Vibhooti Khand, Gomti Nagar, Lucknow, Uttar Pradesh, 3Obstetrics and Gynaecology, Jawaharlal Institute of Postgraduate Medical Education and Research, Dhanvantri Nagar, Puducherry, India

Address for correspondence: Dr. Manish Singh, Email: manish007singh@yahoo.com

References