Unmasking Silent Cervical Stenosis: A Case Report of Spinal Cord Concussion Following Minor Trauma

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BACKGROUND

- **Clinical Challenge:** Congenital cervical stenosis can remain clinically silent for decades without any detectable neurologic signs on standard examinations.
- **Precipitating Events:** Patients with this hidden vulnerability are at risk for spinal cord concussion (SCC) or myelopathy following minor trauma.
- **Clinical Context:** Pain physicians routinely evaluate patients with radiculopathy and gait complaints; severe cervical stenosis may coexist yet remain entirely undetectable during baseline evaluations.

CASE DESCRIPTION

- **Patient:** 66-year-old man presenting for evaluation of right L4 radiculopathy following a deadlift injury.
- **Baseline Examination:** Demonstrated subtle right quadriceps weakness and a positive femoral stretch test. Crucially, reflexes were normal, plantars were downgoing, Hoffman's sign was absent, and there was no clonus.
- **History:** Reported a lifelong tendency to trip and fall, which was initially deemed reasonably attributable to his known lumbar pathology.
- **Initial Plan:** Conservative management was recommended, with an epidural steroid injection planned if symptoms persisted.

INTERVENTION & RESULTS

- **Clinical Event:** Three weeks post-evaluation, the patient sustained a low-energy fall on ice, striking his back and head.
- **Immediate Presentation:** Experienced immediate, complete upper and lower extremity loss of sensation lasting approximately 10 minutes without loss of consciousness (consistent with SCC).
- **Post-Fall Examination (1 Week):** Demonstrated a completely transformed neurologic picture featuring new bilateral Hoffman's sign, bilateral clonus, impaired tandem gait, and a positive Spurling's test.
- **Imaging (MRI):** Revealed a developmentally narrow cervical canal, severe central stenosis at C3-4, circumferential disc bulge with loss of cerebrospinal fluid reserve, and T2 hyperintense cord signal.
- **Progression:** The patient developed progressive groin/toe numbness, decreased hand dexterity, and persistent imbalance requiring a cane. Due to persisting upper motor neuron signs, he was urgently referred for surgical decompression.
- **Follow Up**: Patient is s/p posterior cervical laminectomy C3-4 and fusion with instrumentation C3-5. Postoperatively, paresthesias have completely resolved. Strength and pain have both improved

DISCUSSION

- **Diagnostic Pitfalls:** This case illustrates that severe congenital stenosis can be completely undetectable on a standard, thorough neurologic examination prior to a traumatic event.
- **Vulnerable Populations:** A subset of pain clinic patients harbor a silent anatomic vulnerability that places them at high risk for severe neurologic injury from minor trauma.
- **Clinical Takeaway:** Heightened clinical awareness is required when a patient's gait instability appears disproportionate to their known spinal pathology.
- **Preventative Care:** Strongly reinforces the critical importance of proactive fall-prevention counseling in this patient population.

REFERENCES

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