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Risks ranging from transient paralysis to persistent cord injury after caudal block: case series

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Objective

- Caudal epidural block is common treatment of choice for relieving chronic pain from spinal stenosis or herniated lumbar discs.
- Complications of caudal epidural block, such as vasovagal reaction, postdural puncture, epidural abscess, and epidural hematoma occur rarely when the procedure is performed correctly. However, neurological deficit after injection could be happened infrequently.
- In this regard, we reported two cases of sudden paralysis after caudal epidural block.

CASE 1

- A 75-year-old man with aggravated low back pain and radiating pain in both lower legs visited to the outpatient clinic. He had the operation history of bilateral partial laminectomy, interbody fusion cage, posterior instrumentation at L4/5/S1 levels. In addition, probable epidural fibrotic change at L5/S1 level and mild disc bulging at L2/3, L3/4 were noted in L-spine MRI.
- Caudal epidural block with 0.1% lidocaine at a dose of 20 ml and dexamethasone 2.5mg was performed using ultrasonography (Accuvix XQ, Medison, Seoul, Korea). After injection, the patient complained of gradual weakness in both lower extremities and urinary retention. In physical examination, both lower extremity were flaccid, no knee and ankle jerk, and no pathologic reflex. After 4 hours later, knee jerk appeared, and also gradual motor recovery was observed to MRC grade 2 to 3 with self-successful voiding. There was no abnormal laboratory finding including inflammatory marker, and no significant pathologic findings in enhanced MRI of C, T, L-spines and sacrum.
- One week later, motor grade reached to 4 MRC grade 3 to 4. Another 1 week later, the patient walked independently with discomfort of right ankle dorsiflexion (still MRC grade 4).

CASE 2

- A 74-year-old man with low back and radiating lower extremity pain experienced paraplegia after receiving a fluoroscopic guided caudal epidural block (0.18% ropivacaine at a dose of 8 ml and dexamethasone 2.5mg) and psoas compartment block (0.15% ropivacaine at a dose of 15 ml) for pain relief, which was later discovered to be caused by infarction at conus medullaris.
- After injection, the patient abrupt complained of motor weakness and heating sensation in both lower extremity, and also urinary/bowel incontinence. In enhanced L-spine MRI, acute infarction of conus medullaris was noted. After completing steroid pulse therapy with for 4 days, the patient transferred to our department for rehabilitation with diagnosed as paraparesis with sensory level of T2/T9, and motor level of T2/T9, SCI AIS-A. After one month with rehabilitation, motor recovery was observed and level of the sensory last intact was also improved to T10 / T12. However, bladder function was still areflexic state.

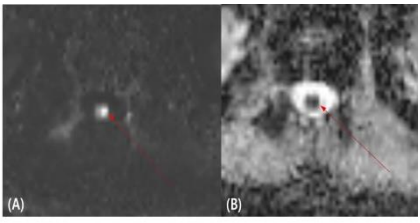

Figure 1. (A) Diffusion-weighted image(DWI) and (B) ADC map of Diffusion weight image in L-spine MRI (*ADC = apparent diffusion coefficient). (A) DWI showing high signal intensity in the area of conus medullaris of spinal cord, (B) ADC map showing diffusion restriction in same area, indicating acute cord infarction.

Conclusion

- Patients with severe stenosis or operation history should be approached carefully with clinician's enough understanding of the risk ranging from transient paralysis to persistent spinal cord injury after caudal epidural block.

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