

Prolonged Bilateral Lower Extremity Weakness Following Bilateral Hip  
Articular Branch Blocks in a Patient with Peripheral Vascular Disease

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Background

The anterior innervation of the hip joint is provided by the femoral and obturator nerves, whose articular branches can be readily accessed for local anesthetic blockade or radiofrequency ablation. In contrast, the posterior innervation, supplied by the sciatic nerve, is less accessible and therefore rarely targeted. Peripheral nerve blocks generally allow for full return of motor and sensory function, but a small number of patients may experience persistent deficits (1). Awareness of such rare complications is particularly important in patients with comorbidities affecting microvascular circulation, which may increase susceptibility to nerve injury (2,3).

Risk Factors for Neurologic Injury After  
Regional Blocks

| Category          | Examples                                                                                                                        |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Patient-Related   | - Preexisting neuropathy (e.g., diabetes, MS)<br>- Coagulopathy<br>- Vascular disease<br>- Advanced age<br>- Spinal anomalies   |
| Procedure-Related | - Intraneural injection<br>- High injection pressure<br>- Tourniquet use<br>- Hematoma/ischemia<br>- Neurotoxic drugs/additives |
| Block-Specific    | - Interscalene/paravertebral blocks<br>- High-volume/bilateral blocks<br>- Neuraxial in ↑ICP<br>- Intrafascicular injection     |

Case Report

A 66-year-old female with a history of peripheral arterial disease, type 2 diabetes, obesity, bilateral hip osteoarthritis, and prior left hip arthroplasty presented with frequent falls attributed to worsening bilateral hip pain. She underwent bilateral hip articular branch blocks targeting the femoral and obturator nerves under fluoroscopy using bupivacaine 0.5% and Depo-Medrol. Immediately after the procedure, she developed bilateral lower extremity weakness and numbness from the hips to the feet, rendering her unable to stand or bear weight. She was admitted for evaluation. CT pelvis excluded pelvic or retroperitoneal hematoma, and lumbar MRI showed no acute pathology. The patient remained hospitalized for 10 days and was discharged to an inpatient rehabilitation facility for intensive physical and occupational therapy. At two-week follow-up, she reported improved strength and ambulated with a rolling walker. She continues to be followed in the clinic and is awaiting electromyography and nerve conduction studies.

Discussion

High-volume or high-concentration local anesthetic injections can spread to adjacent structures, causing unintended motor or sensory effects. Bupivacaine, though widely used, carries a small risk of neurotoxicity, which is dose and concentration-dependent (2). Additional mechanisms include needle trauma, hematoma, and local ischemia due to vasoconstriction. Patients with microvascular disease, such as peripheral arterial disease or diabetes, may be more susceptible (3). This case highlights the need for careful dosing, patient selection, and close post-procedure monitoring when performing hip articular branch blocks.

References

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