

Lumbar Medial Branch Block (MBB) and Radiofrequency Ablation (RFA)

Understanding Your Risks

Lumbar medial branch block (MBB) and radiofrequency ablation (RFA) are minimally invasive procedures used for the diagnosis and treatment of chronic axial low back pain attributed to lumbar facet joint pathology. MBB is primarily a diagnostic tool to identify facet-mediated pain and predict response to RFA, while RFA is a therapeutic intervention for patients with refractory pain who have failed conservative management. [\[1\]\[2\]](#)

Procedural Overview

- **MBB:** Injection of local anesthetic under image guidance to the medial branch nerves innervating the lumbar facet joints.
- **RFA:** Application of thermal energy via a specialized needle to ablate the medial branch nerves, interrupting pain transmission. [\[1\]\[2\]\[3\]\[6\]](#)

Common Risks and Estimated Incidence

- **MBB:**
 - Transient increased pain at the injection site, muscle soreness, headache, vasovagal reaction, nausea, minor bleeding or hematoma (0.1–1%). [\[1\]\[6\]](#)
 - Vascular penetration rates range from 3.6% to 20%, depending on technique and anatomy. [\[1\]](#)
 - Nerve root irritation (0.1%), typically self-limited. [\[1\]](#)
 - Allergic reaction to injectate is rare. [\[1\]](#)
 - Dural puncture and post-dural puncture headache are exceedingly rare. [\[1\]](#)
 - Infection (epidural abscess, meningitis) is extremely rare. [\[1\]](#)
 - Most minor complications resolve without intervention. [\[1\]\[6\]](#)
- **RFA:**
 - Post-procedural pain or transient worsening of back pain (up to 10%), usually resolving within days to weeks. [\[1\]\[3\]\[6\]](#)
 - Vasovagal reactions, transient numbness, muscle cramps, mild sensory disturbances (0.7–2.3%). [\[3\]](#)
 - Local bleeding or hematoma at the injection site (<1%). [\[1\]\[3\]](#)
 - Infection (superficial or deep) is exceedingly rare (<1%) with proper aseptic technique. [\[1\]\[3\]](#)

- Thermal injury to adjacent tissues (skin, subcutaneous fat, muscle) is possible but uncommon; mitigated by careful technique and use of motor testing.[\[1\]\[6\]](#)
- Multifidus muscle atrophy has been associated with RFA, but clinical significance is unclear.[\[6\]](#)
- Most complications are minor and self-limited.[\[1\]\[2\]\[3\]\[4\]\[5\]\[6\]](#)

Serious or Rare Risks

- MBB:

- Major complications are exceedingly rare; no permanent neurological deficits reported in large series.[\[1\]\[6\]](#)
- Cauda equina syndrome has been reported in rare cases, particularly with particulate steroid preparations; non-particulate steroids are recommended if corticosteroids are used.[\[7\]](#)
- Vascular injury or neural injury may occur, especially in patients with variant anatomy or prior lumbar surgery.[\[1\]\[6\]\[7\]](#)

- RFA:

- Permanent neurological deficit is exceedingly rare and not reported in large series when evidence-based technique is followed.[\[1\]\[3\]](#)
- Vascular injury is rare but possible if the needle is advanced too deeply; direct visualization and motor/sensory testing are recommended.[\[1\]\[6\]](#)
- Acceleration of spinal degeneration has been theorized, but definitive evidence is lacking.[\[6\]](#)
- Device-related complications (e.g., heating of spinal instrumentation or implantable devices) are rare; current data support safety in these populations.[\[1\]\[6\]](#)
- Dural puncture and post-dural puncture headache are exceedingly rare.[\[1\]](#)
- Allergic reaction to injectate is rare.[\[1\]](#)

Patient acknowledgment:

By signing below, the patient acknowledges understanding of the above risks, their estimated incidence, and the potential for both common and rare complications associated with lumbar medial branch block. All questions have been answered to the patient's satisfaction.

Signature: _____ **Date:** _____

Patient Name: _____ **DOB:** _____

References

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3. [Diagnosis and Treatment of Low Back Pain \(LBP\) \(2022\)](#). Maj Danielle Anderson DPT DSc OCS FAAOMPT, Thiru M. Annaswamy MD MA, LTC Adam J. Bevevino MD, et al. Department of Veterans Affairs.
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7. [Cauda Equina Syndrome After Unilateral Medial Branch Blocks of the Lower Lumbar Zygapophyseal Joints](#). Zaghdoudi Z, Eldabe S, Copley S, et al. Pain Practice : The Official Journal of World Institute of Pain. 2022;22(6):582-585. doi:10.1111/papr.13110.