Vertebroplasty / Kyphoplasty

Understanding Your Risks

This document outlines the risks, potential complications, and current evidence regarding the efficacy and safety of vertebroplasty and kyphoplasty for vertebral compression fractures (VCFs). The information is based on large clinical trials, meta-analyses, and society guidelines.

Common Risks and Their Estimated Incidence:

- Cement leakage: Occurs in 10–20% of cases, most often asymptomatic. Leakage can be into veins, paravertebral soft tissue, intervertebral disc, or spinal canal. Symptomatic leakage (nerve root or spinal cord compression, pulmonary embolism) is rare, reported in 0.1–4% of cases.[1][2][3][4][5][6]

- New vertebral fracture (adjacent or remote): Occurs in 10–20% of patients within 1 year, with higher risk in older adults, women, those with multiple treated levels, or cement leakage. The risk is similar between vertebroplasty and kyphoplasty, though some studies suggest kyphoplasty may have a slightly lower risk.[3][7][8][9]

- Infection: Superficial or deep infection is rare, occurring in less than 1% of cases.[6][10]

- Bleeding or hematoma: Minor bleeding is uncommon; significant hematoma is rare (<1%).[10]

- Rib or pedicle fracture: Occurs in less than 1% of cases.[10]

- Worsened pain or failure to relieve pain: Up to 10% of patients may have persistent or worsened pain after the procedure.[2][11][12][13]

Rare but Serious Risks:

- Nerve root or spinal cord injury: May result in new neurologic deficit, paralysis, or bowel/bladder dysfunction. Incidence is less than 1%.[5][6][10]

- Pulmonary embolism (from cement, air, or fat): Reported in less than 0.1% of cases, usually asymptomatic.[6][10]

- Death: Extremely rare, with reported rates less than 0.1%.[10]

- Other complications: Hypotension, cardiac events, anaphylaxis to cement, or need for emergent decompression are exceedingly rare.[10]

Efficacy and Current Evidence:

- Vertebroplasty and kyphoplasty are minimally invasive procedures used to treat painful vertebral compression fractures, especially when conservative management fails. Both procedures can provide rapid pain relief and improved mobility in selected patients, but high-quality evidence shows no clinically significant benefit of vertebroplasty over placebo or nonsurgical management for most patients.[2][11][12][13][14]

- Kyphoplasty may offer better restoration of vertebral height and local kyphotic angle, but does not provide superior pain relief or functional outcomes compared to vertebroplasty.[3][13][15]

Other Considerations:

- Patient selection: Careful selection is essential. Frailty, advanced age, and multiple treated levels increase the risk of complications and new fractures.[7][9]

- Complication rates: Major complications occur in less than 1% of cases for osteoporotic fractures. Complication rates are similar between vertebroplasty and kyphoplasty.[4][5][6][10]

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 vertebroplasty and kyphoplasty. All questions have been answered to the patient's satisfaction.

Patient Signature: _____ **Date:** _____

Patient Name: _____ **DOB:**_____

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