

Increased Fracture Risk Associated with Epidural Steroid Injections

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Committed to providing helpful information to our members about key patient safety issues, the International Spine Intervention Society's Patient Safety Committee has developed a FactFinder series. FactFinders will explore and debunk myths surrounding patient safety issues. The intent of this FactFinder is to address potential increased fracture risk associated with epidural steroid injections.

Myth: Epidural steroid injections increase a patient's risk of fractures.

Fact: There is conflicting evidence in the spine literature. While the most recent study found no increased risk and possibly a decreased risk for osteoporotic vertebral compression fractures following epidural steroid injections, there is some prior literature supporting the conclusion that steroid injections may pose an increased risk for vertebral fractures.

The use of lumbar epidural steroid injections (ESI) as a non-operative treatment option for patients with low back pain increased 271% from 1994 to 2001 in the Medicare population¹, and this trend has continued. As such, it is important to be aware of any associated adverse systemic effects of steroid use, including the increased risk of fractures.

Although the systemic effects of exogenous steroids have been well studied, including their role as the most common cause of secondary osteoporosis, it is important to note that adverse effects have been shown in patients with long-term steroid use involving high dosages and cumulative effects of perpetual use. Single ESIs are neither perpetual nor of high dose. The risks are therefore theoretical and probably low. On a theoretical basis, multiple ESIs do, however, carry the risk of inducing effects similar to long-term low dose oral steroids. Multiple ESIs in a single patient, therefore, should be considered after weighing the risks and benefits for the individual patient.

While these adverse effects have been studied most extensively in oral or inhaled glucocorticoid use, Mandel *et al* showed that injected steroids are associated with an increased risk for vertebral fractures, specifically, even when other co-morbidities are accounted for.² A recent study that was presented at the 2014 North American Spine Society meeting by Carreon *et al* found no increased risk of osteoporotic fractures of the spine, hip or wrist with exogenous steroids administered via the epidural space, transforaminal space, or large joints.³

Conclusion

Based upon the current state of the evidence, it is reasonable to conclude that single epidural steroid injections likely do not increase the risk of fractures, but that theoretically, multiple

epidural steroid injections may increase the risk and that potential risk should be considered when assessing their appropriateness for an individual patient.

References

1. Friedly J, Chan L, Deyo R. Increases in lumbosacral injections in the Medicare population: 1994-2001. *Spine* 2007; 32:1754-1760.
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3. Carreon L, Ong K, Lau E, Kurtz S, Glassman S. Risk of osteoporotic fracture after steroid injections in Medicare patients. *Scoliosis* 2014, 9 (suppl 1):046.