

## Conscious Sedation FactFinder

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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 safety issues surrounding the use of conscious sedation.*

**Myth: Conscious sedation is typically needed when performing most interventional pain procedures (e.g. epidural steroid injections, sacroiliac injections, medial branch blocks, and radiofrequency denervation).**

**Fact: Routine use of sedation is not indicated for interventional spine procedures.**

Sedation and analgesia include a continuum of states of consciousness ranging from minimal sedation (anxiolysis) to general anesthesia. This FactFinder will not address minimal sedation or anxiolysis; but will focus on moderate (conscious) sedation. "Moderate (conscious) sedation is a drug-induced depression of consciousness during which patients respond purposefully to verbal command, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained."<sup>1</sup>

Cases of neurologic injury have been reported in patients undergoing interventional pain procedures; some were believed to be due to heavy or over-sedation. In these cases, sedation resulted in the inability of the patients to respond to any potential discomfort or paresthesias to warn practitioners.<sup>2</sup>

For cervical procedures, an analysis of closed claims involving cervical interlaminar or transforaminal injections revealed that when the patient is heavily sedated during the procedure or unresponsive at the time of injection, there is an increased risk of spinal cord injury.<sup>3</sup>

If sedation increases the risks associated with interventional pain procedures, does sedation benefit patients? To determine patient perception of the need for sedation before epidural steroid injections and zygapophysial joint injections, Cucuzzella *et al.* surveyed 500 consecutive patients receiving lumbar, thoracic, and cervical epidural or facet injections. They found that only 17% of patients requested sedation before an initial injection, and concluded that routine sedation before diagnostic and

therapeutic injections is not necessary. Thus the majority of patients would not request sedation before a procedure when given the option.<sup>4</sup> In fact, the 17% cited in this study may be even higher than average. Diehn *et al.* demonstrated only a 3% dissatisfaction rate in nearly 6900 patients when transforaminal injections were performed without sedation.<sup>5</sup> The findings from the two aforementioned retrospective trials were bolstered by a randomized controlled trial by Cohen who found that sedation did not predict satisfaction with care. Patients who received fentanyl as part of the sedation were not more likely to report pain relief.<sup>6</sup> Collectively, these studies show high patient satisfaction without the routine use of sedation.

The findings that patients do not routinely need sedation are supported by the American Society of Anesthesiologists, which produced a statement on anesthetic care during interventional pain procedures for adults (approved by the ASA House of Delegates on October 22, 2005 and last amended on October 20, 2010). In that statement, it was the opinion of the Committee that the majority of minor pain procedures, under most routine circumstances, do not require anesthesia care other than local anesthesia (including epidural steroid injections, epidural blood patch, trigger point injections, sacroiliac joint injections, bursal injections, occipital nerve block, and facet injections). They further went on to state “the use of general anesthesia for routine pain procedures is warranted only in unusual circumstances”. However they also noted “procedures that are prolonged and/or painful often require intravenous sedation and may warrant use of monitored anesthesia care”.<sup>7</sup>

The following summarizes the International Spine Intervention Society’s Guidelines (2<sup>nd</sup> edition) regarding the use of sedation for pain procedures:<sup>8</sup>

- Routine use of sedation is not indicated for any of the procedures described in the guidelines.
- Patients must remain awake to be able to warn of adverse events. This applies particularly to procedures in which:
  - large nerves might be impaled or otherwise injured during the insertion of a needle;
  - the early effects of local anesthetic agents injected may herald concern over the subsequent injection of corticosteroids; and
  - nerves are to be coagulated, during which nerves other than the target nerve may be affected.
- Deep sedation defeats the purpose of diagnostic blocks; patients must be awake to describe pain level, intensity, quality, and distribution. Barring extreme cases, procedures should not be performed under deep sedation. Deep sedation is reserved for genuine cases in which it is indicated for the patient’s comorbid condition. For example, when a patient is unable to lie still for the required time (e.g. dystonias, movement disorders).

- Anxiety or apprehension should not be an automatic indication for sedation.
- If sedation is used:
  - The physician must be competent in its use, complications, and treatment of adverse reactions.
  - Facilities must be equipped and competent in cardiopulmonary monitoring, resuscitation, reversing agents, and continuous observation.

For the **frequently performed** spinal procedures mentioned, conscious sedation has no clear added health/outcome benefit, could cause increased risk for certain complications, and adds to health care costs. Therefore, for **these types of** procedures, physicians should be judicious in the safe use of sedation for special circumstances, and patients should be advised during informed consent that sedation is not necessary. When longer procedures, such as discography or radiofrequency ablation are performed, the physician and patient need to weigh the risks and benefits of increased procedural harm with the minimal advantage associated with intravenous sedation. **Providing patient educational material regarding sedation can assist patients in making informed decisions.** If the physician performing the procedure decides to administer and supervise the sedation, they should be trained and qualified to do so. In these situations, a separate healthcare provider is required to assist with the administration of the medications and monitoring of the patient.

#### References:

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