



Happy Saint Patrick's Day!

## PIC QUESTION OF THE WEEK: 3/16/09

Q: Should patients avoid NSAIDs after spinal fusion surgery?

A: Nonsteroidal antiinflammatory drugs (NSAIDs) are some of the most frequently prescribed and self-administered medications worldwide. Although adverse effects have been described in multiple organ systems, overall safety of this group of compounds contributes to their widespread popularity. It has been suggested that NSAIDs may reduce bone union after fractures and possibly influence final positioning of teeth when administered to patients with orthodontic appliances (PIC Question-NSAIDs and Orthodontics 11/28/05). Supportive evidence for this is limited and the clinical significance of these associations continues to be controversial. Similarly, the role of NSAIDs in affecting successful union of bone after spinal fusion surgery has been evaluated and is considered an inconclusive, yet significant issue by most orthopedic and spinal surgeons. This concern is based on the role of prostaglandins in bone formation and resorption. Inhibition of cyclooxygenase (COX) enzymes by NSAIDs reduces prostaglandin levels and, consequently, can inhibit bone growth and possibly result in pseudarthrosis (non-union of bone resulting in a *false joint*). Most research has been directed at ketorolac, a frequently used post-operative analgesic for patients requiring spinal fusion surgery. Several studies have attempted to determine whether the dose and duration of NSAID treatment affected the success of spinal fusion surgery. In 2008, a review of 405 patients undergoing spinal fusion surgery showed no significant reduction in spinal fusion rates in patients receiving ketorolac (30 mg every 6 hours X 48 hours) postoperatively versus a control group. A retrospective study comparing outcomes of patients prescribed ketorolac, COX-2 inhibitors, or no NSAIDs for 5 days post-operatively revealed there was a significantly higher incidence of non-union in patients using high doses of ketorolac (120-240 mg/day). There does not appear to be a consistent practice guideline for using NSAIDs in patients undergoing spinal fusion surgery. Given the potential, however, surgeons tend to avoid the risk by withholding NSAIDs for periods ranging from 2-7 days following the procedure. More studies are required to determine the optimal NSAID-free period in patients undergoing spinal fusion surgery.

### References:

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