



Abstract: Pain Control for Limb Lengthening and Reconstruction Surgery

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What was the question?

Limb lengthening and reconstruction surgery can be associated with moderate to severe pain in some cases that is poorly controlled with as-needed (PRN) opiate medications. Questions posed included: how frequent is moderate/severe in our practice? What kinds of pain were seen? What interventions were necessary to adequately control patient pain? What medications were most effective in controlling pain? Did a patient's previous medical/surgical history play a role in pain therapy?

How did you answer the question?

We retrospectively reviewed all limb lengthening and reconstruction patients during years 1999-2004. Charts of patients referred for consultation with a pain management specialist were examined for surgery type, types of pain encountered (somatic pain, neuropathic pain, pin-site pain, osteotomy pain, other pain types) amounts/types of pain medications used, effectiveness/complications of medication therapy, and pre-existing patient history of chronic pain or opiate dependence.

What are the results?

Of the 500 cases performed in this period, 23% were referred for consultation with an anesthesiology pain specialist (PJW). PRN opiate medications alone were inadequate for pain control in these patients (Visual Analog Scale (VAS) > 8). Surgery types included treatment of non-unions, deformity correction, acute trauma, and limb lengthening. Osteotomy site pain, neuropathic pain (burning, tingling), muscular pain/cramping, and joint pain were all common, with pin-site being less common. During treatment, the period of bone distraction was associated with increased pain. All patients had good/excellent pain control (VAS < 2 at rest, VAS < 4 with motion/weight-bearing) with long-acting opiate medications plus PRN breakthrough medications. Neuropathic pain was well controlled with antidepressant (desipramine, amitriptyline, or paroxetine) or anti-epileptic medications (gabapentin, or tiagabine). Prior history of chronic pain or illicit substance abuse was associated with higher medication requirements but pain-control effectiveness was not affected. Constipation requiring laxative treatment was the only significant side effect encountered. All patients were successfully tapered off all pain medication at the end of treatment, including those patients with a history of substance abuse.

What are your conclusions?

During limb lengthening, patients experience a variety of pain types. Adequate pain control can be safely attained during limb lengthening with combinations of long and short acting opiates and other adjunctive medications. Attention must be paid to individualizing pain therapy based on pain severity and patient history.

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