

sequelae of these two episodes were mild motor impairment of the intrinsic muscles of the hands and feet, as well as significantly distressing burning pain and deep muscle pain affecting all four extremities in a diffuse distribution.* Following lumbar spinal fusion to correct the mechanical derangement causing his back pain, parenteral opioids were administered *via* a continuous intravenous infusion for postsurgical pain control. Not only did the parenteral opioids effectively manage the postoperative pain, but as a secondary outcome, they also abolished the deep muscle pain and burning pain associated with the GBS.

In light of this brief case report, Connelly *et al.*'s underlying assumption, that their patient's response to opioid analgesics was typical of GBS patients, might be in error. A case control experimental design, as used by these authors, does not allow generalization from its results. The outcome of such studies simply points the way for further research.

*Ennis JH: The physician-patient relationship: A patient-physician's view. *Canadian Family Physician* 36:2215-2220, 1990

Anesthesiology
75:914, 1991

In Reply:—We appreciate Ennis's interest in our case report, and certainly recognize individual variations in patients' responses to therapy. In general, burning, hyperesthetic pain is often believed to be neurogenic in origin, and it is well accepted that neurogenic pain responds poorly to opioids.

We certainly agree that this topic warrants further investigation.

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A Palatable Gelatin Vehicle for Midazolam and Ketamine

To the Editor:—The medical community continues to search for an ideal sedative medication for patients undergoing office and surgical procedures and in the intensive care unit. When we choose a route of administration for sedative medications in patients of low chronologic or mental age, the amount of associated pain can be especially important.

Two agents increasingly used for oral sedation are midazolam and ketamine.¹⁻⁴ Unfortunately, neither of these drugs is available in oral formulation in this country, and the intravenous forms of both of these medications are quite unpalatable unless mixed with a flavoring. A recent letter to the editor proposed one formulation.² We would like to present some alternatives.

During our 5-yr experience with these medications, we have used melted PopSicle®, orange juice, apple juice, flavoring extracts (cherry and banana), Hershey's chocolate syrup, crème de maraschino (cherry syrup), cola, and flavored gelatin with and without sugar. Although all these formulations can be used to deliver the drug, they meet with variable acceptance by the patient. In addition, nausea and vomiting have been noted in some of these patients if they are not anesthetized

after becoming sedated. Vomiting, when it occurs, occurs most often in outpatients after the sedation has begun to resolve.

At present we prefer flavored gelatin, sweetened with sugar, as the vehicle for delivery. It is used for sedation in the pediatric intensive care unit, the operating rooms, and the clinics. We have chosen the sugared form because of the problems of administering aspartame (NutraSweet®) to children with phenylketonuria. Our dose is 0.4-0.8 mg/kg for midazolam and 4-8 mg/kg for ketamine. Onset time is as rapid as with other flavorings (10-20 min). The duration of sedation varies from 20 min to 3 h.

The gelatin mixture is made in ice cube trays. It is prepared by adding ¾ cup of boiling water to a small package of flavored gelatin (one that makes 2 cups) and allowing this to cool to at least 40°C. The liquid gelatin is then added to the drug in a ratio of at least 1.3 ml gelatin to every 1 ml drug. Cubes are made containing 5, 10, or 15 mg midazolam or 100 or 250 mg ketamine, and the mixture is allowed to set in a refrigerator. Once set, the gelatin may be administered as prepared or may be cut into portions if fractional doses are needed (for example, a 5-mg cube is cut in two to provide 2.5 mg). The pH

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