

## Comparison of Topical Anesthetics and Vasoconstrictors vs Lubricants Prior to Nasogastric Intubation: A Randomized, Controlled Trial

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**Abstract.** **Objective:** To determine whether pretreatment of the nose and throat with topical anesthetics and vasoconstrictors would reduce the pain associated with nasogastric (NG) intubation. **Methods:** This was a prospective, randomized, controlled trial assessing the pain of NG intubation in patients pretreated with topical anesthetics and vasoconstrictors vs surgical lubricants alone. The subjects were 40 alert, cooperative adult patients requiring NG intubation without allergies to the study medications or contraindications to their use from a suburban university-based ED. The patients in the experimental group had phenylephrine 0.5% sprayed in their noses followed by instillation of 5 mL of 2% lidocaine jelly. Their throats were sprayed with 2% tetracaine and 14% benzocaine. The control patients received intranasal lubrication only. The primary outcome measured was pain of NG intubation on a 100-mm visual analog scale. Other outcomes included nasal pain, discomfort from gagging, and the incidences of vomiting, choking, and epistaxis. **Results:** The mean age ( $\pm$ SD) was  $54.8 \pm 22.3$  years; 20 (50%) were female. The patients who had a combination of topical anesthetics and vasoconstrictors inserted prior to NG in-

tubation experienced significantly less overall pain/discomfort than did the control patients [28.6 mm (95% CI = 17.3 to 39.9 mm) vs 57.5 mm (95% CI = 44.9 to 70.1 mm),  $p = 0.001$ ]. The patients in the experimental group also experienced significantly less nasal pain than did the patients in the control group [18.1 mm (95% CI = 8.0 to 28.2 mm) vs 44.4 mm (95% CI = 30.4 to 58.6 mm),  $p = 0.003$ ] and significantly less discomfort from gagging than the patients receiving pretreatment with a lubricant alone [24.1 mm (95% CI = 11.1 to 37.1 mm) vs 50.9 mm (95% CI = 36.7 to 65.1 mm),  $p = 0.006$ ]. There was no between-group difference in the frequencies of adverse effects. **Conclusions:** Use of topical lidocaine and phenylephrine for the nose and tetracaine with benzocaine spray for the throat prior to NG intubation results in significantly less pain and discomfort than use of a nasal surgical lubricant alone. Widespread use of topical anesthetics and vasoconstrictors prior to NG intubation is recommended. **Key words:** nasogastric intubation; topical anesthetics; topical vasoconstrictors; lidocaine; tetracaine; benzocaine; phenylephrine. *ACADEMIC EMERGENCY MEDICINE* 1999; 6:184-190

**I**N 1996 an estimated 700,000 nasogastric (NG) intubations were performed in EDs throughout the United States, making NG intubation one of the most common procedures performed in the ED and in other hospital settings.<sup>1</sup> Indications for use of NG tubes include aspiration of stomach contents in the assessment and management of upper gastrointestinal (GI) bleeding; prevention and treatment of paralytic ileus, acute gastric dilatation, and intestinal obstruction; and administration of charcoal in patients with toxic ingestions. NG intubation may result in significant pain and discomfort for patients.<sup>2</sup> In a study comparing commonly performed procedures in the ED, insertion of an

NG tube was found to be the most painful procedure.<sup>3</sup> Thus, methods to reduce the pain and discomfort associated with NG intubation are clearly indicated.

Topical anesthesia has been used successfully in other types of intubation, such as nasotracheal intubation in the awake patient.<sup>4,5</sup> A recent study that evaluated the efficacy of topical anesthesia for NG intubation found that an intranasal spray of 4% lidocaine significantly reduced the distress experienced by patients during nasogastric intubation without any increase in difficulty of tube insertion.<sup>6</sup> Similarly, patients undergoing upper GI endoscopy who received lidocaine spray experienced significantly less discomfort from the intubation compared with patients who received placebo.<sup>7</sup> In contrast, a study comparing various formulations of sprayed intranasal topical anesthetics and vasoconstrictors prior to transnasal bronchoscopy failed to demonstrate any benefit of these agents.<sup>8</sup> Furthermore, a study comparing the efficacies of topical pharyngeal Cetacaine spray prior to upper GI endoscopy failed to demonstrate

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