TITLE: THE REDUCTION OF POST - SURGICAL NAUSEA AND VOMITING IN PATIENTS RECEIVING N_2O

AUTHORS: J.J.Sacco, M.D., W.D.Grant, Ed.D., D.D.Luthringer, M.D., A.London, M.D., C.A.Kamps, Ph.D.

AFFILIATION: Anes. Dept., St. Joseph's Hospital Health Center, SUNY Health Science Center at Syracuse; Johns Hopkins University, Baltimore, MD.

The use of acupressure as an antiemetic has been documented in surgical procedures. It has been shown to be effective in eye surgery[1], in minor gynecological operations[2], and for pregnant women[3]. The purpose of this study is to determine if the application of acupressure to specific body points will reduce and/or eliminate the severity of nausea and vomiting experienced by patients undergoing out-patient surgical procedures who had received Nitrous Oxide (N_2O) during anesthesia.

A total of 225 female patients (ASA I or II) undergoing outpatient or one day laparoscopy or laser gynecological surgery during the morning surgery sessions were recruited for this study. Seventy-five (75) patients will be recruited from each of three cooperating hospitals. A standardized anesthetic regimen was used for all patients: Sodium Penathol, narcotic, muscle relaxant for intubation, N_2O - 60%, Oxygen (O_2) carrier, and Isoflurane.

Following institutionally approved informed consent procedures, patients were randomized into one of three groups at each center. Group I patients received a pair of acupressure bands designed with a button to provide antiemetic effects. Group II received bands without buttons (to control for the presence of the bands). Group III received no bands.

Data on nausea, vomiting and headache was collected 1 hour, 4 hours and 24 hours post surgery using a modification of the McGill Pain Questionnaire[4]. A significant difference was found in the three groups. There is a clear advantage to the use of acupressure to reduce nausea and vomiting in this patient population.

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TITLE: AUTONOMIC NEUROPATHY AND GASTRIC VOLUME IN THE ANESTHETIZED PATIENT

AUTHORS: Fernando Cejudo, M.D., Ammar Kawas, M.D., and A. H. Giesecke, M.D.

AFFILIATION: U. TX. Southwestern Med. Sch., Department of Anesthesiology Dallas, TX 75235-9068

A speculation is that all patients with diabetes mellitus have some degree of diabetic autonomic neuropathy (DAN) which will cause gastroparesis and larger gastric volumes. To examine this hypothesis 42 fasting patients to undergo general anesthesia for elective surgery were divided into three groups - 14 controlled non-diabetic patients, 14 diabetic patients with DAN, and 14 diabetic patients without DAN. To determine the presence of DAN five autonomic cardiovascular function tests as described by Campbell et al were performed, (1) heart rate response to standing, (2) blood pressure response to standing, (3) heart rate variation during deep breathing, (4) heart rate response to Valsalva maneuver, and (5) blood pressure and heart rate response to isometric exercise. A diagnosis of DAN was made in those patients who had a positive response to four out of five tests. On all patients after induction a nasogastric tube was passed and two milliliters of gastric contents removed to determine pH. Two hundred fifty milliliters of polyethylene - glycol (PEG) were injected via the nasogastric tube according to a technique by Ong et al. All PEG and gastric contents were removed and a five milliliter aliquot was taken for analysis and computation of gastric volume.

Gastric volumes in the diabetic patients were larger than in the control patients (average 38 vs 32 milliliters, $p < 0.01$). Gastric pH in the diabetic patients was more acid than in the control patients (average 1.8 vs 2.7, $p < 0.001$). No correlation between duration of diabetes and presence of DAN could be found. Gastric volume and pH were not found to be related to DAN. Lack of correlation between DAN score as determined by the Campbell tests and gastric volume and pH of diabetic patients may be due to diabetes mellitus affecting the autonomics of the cardiovascular system differently than those supplying the gastrointestinal tract.