

Postoperative Vomiting and Nausea after ENT Surgery are Reduced by Gastric Decompression

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Abstract

During oral and nasal surgery, the stomach receives passive blood flow. Postoperative nausea and vomiting could result from it (PONV). In ear, nose, and throat (ENT) surgery, we looked into the connection between gastric decompression (GD) and the severity of PONV. The study included 137 participants who had had ENT surgery. Patients in Group I received GD following surgery prior to extubation, but those in Group II did not. The number and percentage of patients displaying PONV were found to be considerably higher in Group II compared to Group I in the second, fourth, eighth, and twelfth postoperative hours. PONV in Group II was likewise noticeably more severe than in Group I. When compared to individuals who aspirated less than 10 mL of stomach content in Group I, those who aspirated more than 10 mL had a PONV ratio in the second hour that was much higher. There is no statistically significant difference between the stomach content aspirated and PONV ratio in the fourth, eighth, or twenty-fourth hours. In ENT surgery, GD lessens the frequency and severity of PONV.

Keywords: Nausea; Vomiting; ENT surgery; Gastric; motility; Pediatric; Surgery; Intravenous fluids; Local Anaesthetics

Introduction

Both patient features and risk factors connected to surgery can contribute to postoperative nausea and vomiting (PONV). The prevalence of PONV is typically between 20 and 30 percent, but after ENT surgery, it can reach up to 70 percent. Early age, female sex, tobacco addiction, the type of surgery performed, a history of PONV following previous surgical operations, motion sickness, gastro paresis, obesity, and the use of opioids as postoperative analgesics are all potential risk factors. Steroid therapy, intravenous hydration support, and antiemetic usage in a single dosage or many modes are all parts of managing PONV. Additionally, it is recommended to take fewer opioid analgesics for postoperative pain management rather than none at all. Perioperative gastric decompression (GD) techniques and P-6 acupuncture point stimulation are further therapy possibilities [1].

The stomach receives passive blood flow while ENT surgery is being performed. While some research in the literature show that eliminating ingested blood by GD reduces PONV incidence, other reports claim that it actually increases the incidence. In our study, we investigated the association between GD and PONV occurrence as well as the relationship between the volume of stomach contents aspirated and the severity of PONV [2].

Materials and Methods

Patients with a history of PONV, motion sickness, antiemetic drug allergies, Meniere's disease, major cancer surgery, a fasting period of less than eight hours before an elective procedure, upper respiratory system pathology, a history of antiemetic use, morbid obesity, and pregnancy were excluded from the study. Patients were also not included in the study if there were significant postoperative problems, the procedure lasted more than 180 minutes, or if steroids or antiemetics were administered during the perioperative phase. One day prior to the procedure, the anaesthesia in each case was evaluated. With the use of laboratory tests, all patients' blood counts, coagulation factors, electrolyte readings, liver enzyme readings (SGOT, SGPT), BUN, creatinine, and hungry blood glucose readings were all kept under control [3].

A nurse used the closed envelop method to divide the patients into

two groups in the prep area. Patients in Group II, which is designated as the control group, did not get GD while those in Group I, which is designated as the study group, did. Without any pre-medication, patients were brought directly to the operating room. A 22 gauge (G) intravenous cannula was used to open the vascular access from the veins on the left hand after providing three-channel electrocardiogram (ECG), noninvasive blood pressure and peripheral oxygen saturation (SpO₂) monitoring. Isolyte solution was then administered at a rate of 8 mL/kg/hour. Endotracheal intubation was carried out after 3 minutes of breathing 6 L of 100% oxygen through the face mask [4].

All patients received ventilation using a volume-controlled ventilation system (Datex-Ohmeda, S/5 Advance, GE Healthcare, USA) with a flow rate of 2 L/min., 50–50% air–O₂, and 1–2% sevoflurane. The breathing rate was modified to 12 breaths per minute, the inspiration and expiration rates to 1: 2, and the tidal volume to 8 mL/kg. As a postoperative analgesic, the patients received 20 mg/kg of paracetamol intravenously. After the procedure was complete, the breathing devices were shut and 6 L/dk of 100% oxygen was administered. The CH14, 53 cm Mully suction catheter, and GD procedure were administered to the patients in Group I by oral access into the airway (number 3). We waited for passive drainage of air after inserting the distal of the suction catheter into the stomach [5].

The amount of stomach content suctioned with an injector was calculated using the intraluminal capacity of CH14, 53 cm suction catheter as 5 mL. The catheter was removed once the stomach's contents had been completely suctioned out. The patients in Group II received the same amount of stomach material during the GD process, but GD was not used. Neuromuscular block, atropine at 0.01 mg/kg,

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and neostigmine at 0.05 mg/kg were recovered when the patients' spontaneous breathing started. The patients were extubated when the spontaneous breathing effort was sufficient. Following extubation, patients were maintained in a 30° head-up posture while receiving 6 L/min of oxygen [6]. The presence or absence of PONV was assessed in relation to the severity in the first, fourth, eighth, and twenty-fourth hours. Patients who displayed PONV were classified as having mild cases (mild nausea, one episode of vomiting, and nausea brought on by eating, drinking, or moving around), moderate cases (two episodes of vomiting, mild nausea without an outside stimulant, and one instance of needing antiemetic medication), and severe cases (vomiting more than twice, severe nausea, antiemetic medication need more than once). Patients with mild to severe PONV were given 10 mg of metoclopramide as an antiemetic. In the intraoperative or postoperative phases, neither of the patient groups got opioid or antiemetic medicine [7].

Discussion

Patients undergoing ENT surgery may have an up to 70% increase in PONV incidence. PONV is a crucial sign of patient satisfaction in these patients, who frequently need inpatient surgery. Along with psychological consequences, PONV may cause airway obstruction, aspiration pneumonia, subcutaneous emphysema, bleeding, opening and delay in wound healing, increase in intracranial pressure, dehydration, electrolyte imbalance, malnutrition due to inadequate oral intake, lengthen hospital stays, and increase costs. According to reports, blood flow to the stomach during the intraoperative and postoperative periods, as well as surgical operations performed during the intraoperative period, are the causes of PONV in patients undergoing ENT surgery. In PONV, direct chemoreceptor trigger zone stimulation by mucosal injury and pharyngeal edema is also useful [8].

The activation of chemoreceptors and mechanoreceptors in the stomach and oropharynx when the trigeminal nerve is stimulated is another cause of PONV. Postoperative discomfort, anxiety, vertigo, early mobilisation, early oral intake, and opioid analgesics may all increase the risk of PONV. Additionally, it has been noted that individuals whose air pressure rises above 25 cm H₂O while being ventilated with a mask may have an increased risk of PONV related with stomach distension. The incidence of PONV has been reduced in ENT surgery with the adoption of numerous strategies. The most common uses of antiemetics are for prevention and treatment. Whether the patient is aware of it or not, we believe that every anaesthesiologist should administer GD to patients. The gastric approach outperforms the nasogastric method in terms of usability, safety, and ease [9].

However, it was noted in this investigation that 21 patients had a history of vertigo and 35 patients had previous postoperative PONV histories; these patients were not removed from the study. According to reports, using opioids and nitrous oxide during anaesthesia raises the risk of PONV in addition to the type of applied operation. Varying ENT surgery types have extremely different PONV incidence rates. For instance, after middle ear surgery, a 62–80% incidence of PONV has been recorded. In comparison to tonsillectomy and the other procedures, middle ear surgery had a higher incidence of PONV. Our samples were small and varied in terms of the incidence of PONV. Unfortunately, that is the recent study's biggest shortcoming [10].

The statement that there is no connection between gastric evacuation and PONV was also made. In 107 patients undergoing coronary artery bypass surgery using fentanyl and morphine sulphate, it was reported that the need for postoperative antiemetic was 38.5% in the group receiving GD and 28.5% in the patients who did not receive

GD, supporting the claim that GD application may be effective in reducing the frequency of PONV but cannot affect its severity. They claimed that the use of GD has no impact on the occurrence of PONV [11].

Therefore, we can state that GD administered soon before extubation after ENT surgery in individuals for whom we minimised PONV variables lowers the occurrence and severity of PONV. However, it should be remembered that PONV occurs more frequently and badly the more stomach content we desire. There should be more research on the use of GD in various surgical procedures, patient populations, time periods, and even situations when risk factors are present. It can be favoured in adult ENT patients as an alternative to currently utilised pharmacological treatment approaches because it is affordable and simple to use, doesn't require particular expertise, and has a low complication rate [12].

Conclusions

The impact of the disease on the population is lessened by raising awareness about prevalent ENT diseases, their causes, and available treatments. The use of trained community volunteers to raise awareness of safe ENT procedures, the distribution of hearing aids for those who need them, and the evaluation and surgical treatment by the specialist (once a week) made the service more accessible to the rural population.

This ENT healthcare delivery strategy is efficient and, along with primary care physicians, aids in reducing the burden of disease in rural and tribal populations. This approach to offering ENT services could have an impact on the entire country, particularly in underdeveloped nations where there aren't many options for rehabilitation due to a lack of resources and awareness.

Conflicts of Interest

None

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