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Comparison of the Effects of Pharyngeal Packing and Gastric Aspiration with an Orogastric Tube on Postoperative Nausea, Vomiting and Sore Throat in Septorhinoplasty

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ABSTRACT

Introduction: We compared the effects of pharyngeal packing and gastric decompression with orogastric tube application on the incidence of nausea/vomiting, sore throat, and dysphagia. As a secondary objective, we assessed the effect of the selected method on the postoperative pain score and patient satisfaction.

Methods: In this randomized, prospective study were 60 patients aged 18-50 years who underwent elective septorhinoplasty. Nasopharyngeal packing was performed in group 1 and gastric decompression with an orogastric tube in group 2, and both procedures were terminated by the practitioner before extubation. Between-group demographic data, duration of operation/anesthesia, hemodynamic parameters, nausea, vomiting, additional antiemetic requirement, pain/dysphagia during swallowing, visual analogue scale (VAS), and patient satisfaction were measured at 24 h, and the group findings were compared.

Results: The demographic findings and durations of anesthesia/operation were not statistically different between the groups, and there was no difference in postoperative nausea and vomiting, VAS, and satisfaction scores. In contrast, sore throat was twice as common in the nasopharyngeal pack group but decreased over time.

Conclusion: The routine packing approach should be abandoned by anesthesiologists. Because pharyngeal packing is not a completely risk-free procedure, we do not recommend intraoperative packing during nasal surgery. If indicated for surgical reasons, however, protocols, checklists, and observation forms pre-prepared with the participation of the surgical and anesthesia teams should be used. All materials should be included in the surgical (scrub) count, and it should be ensured that all materials are removed before extubation with a matching count. Regardless of the method used, it should not be forgotten that the anesthesiologist is responsible for the examination of the oral cavity and throat via direct laryngoscopy and, if necessary, aspiration before extubation.

Keywords: Postoperative nausea and vomiting, sore throat, pharyngeal packing, aspiration with an orogastric tube

Introduction

Postoperative nausea and vomiting (PONV) is a significant complication that affects patient comfort, with an average rate of 30% in surgical patients and up to 80% in the high-risk groups (1). This condition can be extremely stressful and is directly associated with patient satisfaction. It may further lead to additional problems such as significantly longer post-anesthesia care unit stays, unexpected hospitalization of outpatients, impaired surgical success, and increased healthcare costs (1).

PONV is associated with the surgical method and risk factors such as gender, age, the method of anesthesia and smoking. During pharyngeal, orthognathic and nasal operations in particular, swallowing blood may lead to nausea and vomiting (2), and "pharyngeal packs" are used to reduce the amount of blood swallowed and to prevent the ingestion of foreign materials such as teeth, bone fragments and small items of surgical equipment (3,4). Pharyngeal packing has also been associated with complications such as ruptures of mucous membranes, hematoma, edema of the soft palate and uvula, and even the tongue, sore throat, and stomatitis. If not removed before extubation, serious complications such as airway obstruction and hypoxia may develop, which can lead to death (2,3,5,6). Another approach used in daily clinical practice is gastric decompression via an orogastric tube and aspiration of swallowed blood (7).

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The present study compares the effects of pharyngeal packing and gastric emptying with an orogastric tube on incidences of PONV, sore throat, and pain while swallowing (dysphagia) among patients undergoing septorhinoplasty. As a secondary objective, we assessed the effect of the selected method on postoperative pain visual analog scale (VAS) and patient satisfaction.

Methods

This randomized, prospective study of ASA I patients aged 18-50 years who were scheduled for elective septorhinoplasty in a university hospital's ear, nose and throat (ENT) clinic was launched after the granting of İstanbul Medipol University Ethics Committee approval (approval number: 611, date: 03.06.2021). Patients with chronic diseases other than ASA I (diabetes mellitus, heart failure, liver/kidney disease), individual or familial malignant hyperthermia, a history of muscular/neurological disease, dependence on opioids, alcohol or other drugs, menstruating and lactating women, patients with drug allergies, those using anticoagulants, non-smokers, those with a history of motion sickness in their daily life, and those with a history of nausea and vomiting in their medical history were excluded from the study. Informed consent was obtained from the patients.

The patients were scheduled as the first case in the morning (following 6-8 hours of fasting) and were randomly divided into two groups using the sealed envelope method before being taken to the operating room. In group 1 patients, a pharyngeal pack moistened with isotonic solution was placed after intubation and removed by the same physician before extubation. In group 2, an orogastric tube was inserted for drainage, as visualized by laryngoscopy after intubation. After the operation, a final aspiration was made, the orogastric tube was removed, and the patient was extubated. The same experienced anesthesiology and ENT teams participated in the operations of all patients. After being taken to the operating room, the patients' electrocardiographic, peripheral SpO_2, and non-invasive blood pressure was monitored. Vascular access was established and premedication with 0.05 $mg.kg^{-1}$ intravenous midazolam were administered. The induction of anesthesia was achieved with 2 $mg.kg^{-1}$ IV propofol, 1 $mcg.kg^{-1}$ IV fentanyl, and 0.6 $mg.kg^{-1}$ IV rocuroniums. Anesthesia was maintained with 1-2% sevoflurane and 50 mcg/h remifentanil in a 50% oxygen-air mixture. All patients underwent orotracheal intubation, and the mechanical ventilator was set to a tidal volume of 6-7 $mL.kg^{-1}$, and a PEEP of 2-3 cmH_2O in volume-control mode at an end tidal pCO_2 of 30-35 mmHg. When the heart rate or mean blood pressure increased by 20% from the pre-operative values, 25 mcg bolus fentanyl was administered.

In group 1, after intubation, a throat pack consisting of four gauze pads soaked in 0.9% isotonic solution, standardized, and attached with a wide cotton tie in a knotless roll was placed under direct vision by an experienced anesthesiologist, avoiding oropharyngeal trauma. In group 2, an orogastric probe was inserted under direct laryngoscopy by an anesthesiologist to prevent oropharyngeal trauma after intubation, and drainage was performed. The probe was gently aspirated one last time before extubation and then removed.

All patients were administered 1 g IV paracetamol and 0.5 $mg.kg^{-1}$ IV aldolan 30 min at the end of the surgical procedure for postoperative analgesia. To prevent concurrent nausea and vomiting, 4 mg IV ondansetron was administered. After the operation, a nasal silicone splint was placed in all patients by the ENT specialist. Spontaneous ventilation was performed, and 2-4 mg/kg bridion was used for decurarization. Once spontaneous ventilation was sufficient, the patient was extubated and taken to the recovery room (PACU). Perioperative pre-induction (T1) and post-extubation 10-minute (T2) hemodynamic measurements (MAP, HR) were made, and the demographic information and durations of anesthesia/operation of the patients were recorded. Kortilla's scale was used to determine postoperative PONV (8), which assesses PONV as follows:

No PONV: The absence of any emetic episode or nausea.

Mild PONV: Mild nausea or one emetic episode, or short-lasting (~10 min) nausea of any severity triggered by exogenous stimulus (e.g. drinking, eating or postoperative movement) followed by diminished nausea and the patient's feeling well throughout the entire observation period with no antiemetic drug requirement,

Moderate PONV: One or two emetic episodes or moderate or severe nausea without the exogenous stimulus or a single requirement for antiemetic therapy.

Severe PONV: More than two emetic or moderate to severe nauseous episodes requiring at least one antiemetic administration.

In the event of moderate or severe PONV, 4 mg ondansetron IV was administered for treatment. Pain was assessed using the VAS. Hemodynamic parameters, nausea, vomiting, additional antiemetic requirement, pain while swallowing/dysphagia, and VAS were examined in the postoperative post-anesthesia follow-up unit at postoperative 0 h (T2), 6 h (T3) and 24 h (T4). At 24 h, patient satisfaction was assessed using a four-option rating scale (1: Not at all satisfied, 2: Moderately dissatisfied, 3: Satisfied, 4: Completely satisfied).

Statistical Analysis

The statistical analysis of the study findings was carried out using IBM SPSS Statistics (Version 23.0. Armonk, NY: IBM Corp.) based on descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum and Q_1-Q_3 quartiles). Kolmogorov-Smirnov, Shapiro-Wilk, and Skewness-Kurtosis tests and graphical assessments were used to test the normality of the distribution of quantitative data. An Independent samples t-test was used to compare the normally distributed quantitative data of two groups, while a Mann-Whitney U test was used to compare the non-normally distributed data of two groups. A Repeated Measures test (Analysis of Variance in repeated measurements) was used to evaluate the follow-up of normally distributed variables. A Friedman test was preferred for the follow-up evaluation of the variables without a normal distribution, and a Bonferroni Dunn test was used for the evaluation of pairwise comparisons. Qualitative variables were compared using Pearson's chi-square test, Fisher's exact test, and Fisher-Freeman-Halton exact test. The level of significance was considered $p<0.05$.

Results

The study was conducted between 01.07.2021 and 30.11.2021, and involved a total of 60 cases, of which 90.0% (n=54) were female and 10.0% (n=6) were male. The patients were aged 18-47 years, with a mean age of 27.35±6.96 years; the mean body mass index of the cases was 22.82±3.09 kg/m^2 (17.6-31.3 kg/m^2); the duration of anesthesia was in the range of 115-260 min, with a mean of 165.33±35.77 min; and the mean operation duration was 150.43±37.30 min (103-249 min.). The mean age, gender distribution, height, weight, and BMI measurements, and the durations of anesthesia and operation did not differ statistically between the two groups (p>0.05). All these data are summarized in Table 1.

The mean values were not within the pathological limits in any of the patients' hemodynamic measurements (MAP, HR) at the (T1, T2, T3, T4) time points. Between- and intragroup comparisons revealed no statistically significant difference between GI and GII (p>0.05). The data are presented in Table 2.

There was no statistically significant difference in the incidence rates of nausea and vomiting at postoperative 0 6, and 24 h between the GI and GII groups (p>0.05). In both groups, the rate of PONV underwent a statistically significant decrease over time (Graphic 1). There was also no difference in antiemetics use between the groups. In GI, the use of antiemetics increased after 6 h compared to 0 h, but had decreased significantly by 24 h compared to 6 h. In GII, in turn, the use of antiemetics did not significantly differ between the hours. Sore throat complaints were statistically and significantly more common in GI in GII. In GI, there was no difference between hours 0 and 6, while pain decreased significantly at 24 h. In GII, in turn, no difference was found between measurement times (Graphic 2). There was also no significant difference in dysphagia between and within the groups. All the data on complications are presented in Table 3.

Table 1. Evaluation of descriptive characteristics by groups

		Total (n=60)	Group 1 (n=30)	Group 2, (n=30)	Test value
Age (years)	Median (min.-max.)	17-47 (26)	17-47 (25.5)	20-45 (27)	t: -0.571
	Mean ± SD	27.35±6.96	26.83±7.80	27.87±6.11	**[a]p: 0.570**
Gender; n (%)	Female	54 (90.0)	27 (90.0)	27 (90.0)	-
	Male	6 (10.0)	3 (10.0)	3 (10.0)	
Height (cm)	Median (min.-max.)	147-192 (165)	147-180 (164.5)	155-192 (165)	t: -1.038
	Mean ± SD	165.55±7.59	164.53±6.98	166.57±8.16	**[a]p: 0.304**
Weight (kg)	Median (min.-max.)	42-86 (62.5)	42-85 (62.5)	45-86 (61.5)	t: 0.236
	Mean ± SD	62.43±9.77	62.73±10.08	62.13±9.61	**[a]p: 0.814**
BMI (kg/m^2)	Median (min.-max.)	17.6-31.3 (22.8)	17.9-31.3 (22.8)	17.6-29.3 (22.7)	t: 0.849
	Mean ± SD	22.82±3.09	23.16±3.30	22.48±2.88	**[a]p: 0.399**
The duration of anesthesia (min)	Median (min.-max.)	115-260 (155)	115-260 (159)	125-255 (155)	t: -0.043
	Mean ± SD	165.33±35.77	165.13±36.99	165.53±35.14	**[a]p: 0.966**
The duration of operation (min)	Median (min.-max.)	103-249 (140)	103-249 (145)	105-235 (138.5)	t: -0.062
	Mean ± SD	150.43±37.30	150.13±37.48	150.73±37.76	**[a]p: 0.951**

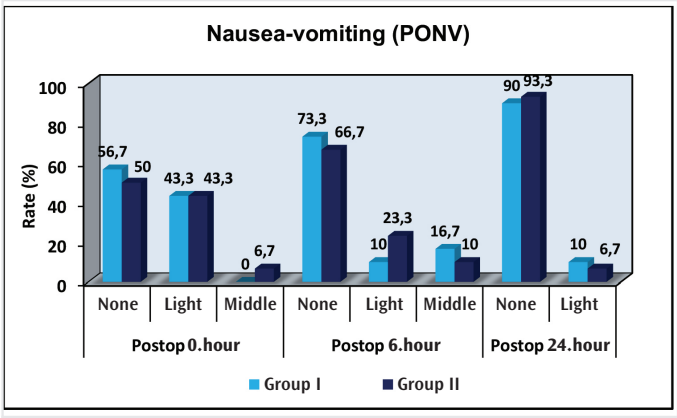
[a]Independent Samples t-test, min.-max.: Minimum-maximum, SD: Standard deviation, BMI: Body mass index

Table 2. Evaluation of mean hemodynamic measurements at follow-up by groups

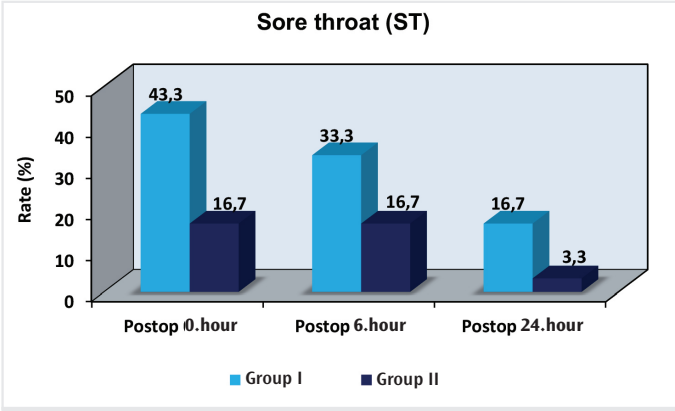
Mean ± SD		Group 1, (n=30)	Group 2, (n=30)	Test value: t	[a]p
		Mean ± SD			
MAP	Pre-operative	85.09±8.86	84.45±8.54	0.284	**0.778**
	Postoperative hour 0	83.38±7.65	84.20±7.78	**0.410**	**0.683**
	Postoperative hour 6	84.59±7.95	85.80±5.06	**0.704**	**0.484**
	Postoperative hour 24	84.43±6.76	86.63±7.30	**1.210**	**0.231**
	Test value: F	0.025	0.461		
	[b]p	**0.875**	**0.712**		
HR	Pre-operative	85.60±9.38	83.17±7.77	1.094	**0.278**
	Postoperative hour 0	83.53±8.44	84.3±10.21	-0.316	**0.753**
	Postoperative hour 6	85.13±7.91	85.53±5.12	-0.233	**0.817**
	Postoperative hour 24	84.67±7.29	85.83±5.85	-0.684	**0.497**
	Test value: F	0.289	0.706		
	[b]p	**0.833**	**0.557**		

[a]Independent Samples t-test, [b]Repeated Measures test, SD: Standard deviation

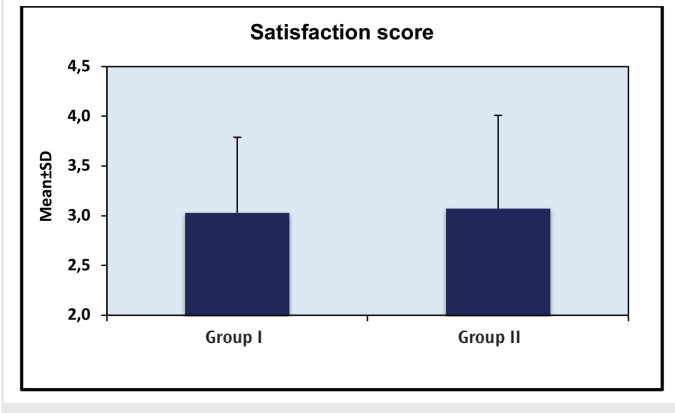
In the evaluation of VAS, neither group exceeded the limit considered as the mean significant pain (VAS ≥4) at any measurement time because of the routine clinical analgesic protocol. There was no difference in VAS between GI and GII, while within-group comparisons made in both groups revealed higher VAS values at 6 h than at 0 h, and at 24 h than at 0 h, and a significant decrease at 24 h when compared to 6 h. Furthermore, no difference was noted in the patient satisfaction scores of the groups (Graphic 3). The data on VAS and satisfaction are summarized in Table 4.



Graphic 1. Distribution of nausea-vomiting incidence rates at follow-up



Graphic 2. Distribution of sore throat incidence rates at follow-up



Graphic 3. Distribution of patient satisfaction scores at follow-up
SD: Standard deviation

Discussion

PONV is considered to be one of the most distressing factors among patients undergoing surgery under general anesthesia. Besides the adverse psychological adverse, PONV can also cause airway obstruction, aspiration pneumonia, subcutaneous emphysema, bleeding from surgical incisions, opening and healing delays, increased intracranial pressure, dehydration, electrolyte imbalance, and malnutrition. Prolonged hospital stays and increased costs may be experienced due to insufficient oral intake, and patients thus have negative impression about anesthesia and surgery (7).

Nasal and orthognathic surgery is growing in popularity worldwide for the correction of various growth disorders and congenital anomalies of the nasal, oral, and maxillofacial regions. Operations in these regions with high vascularization may cause severe bleeding, increasing the incidence of PONV due to blood swallowing in some patients (2,9,10). Therefore, the use of pharyngeal packs, which act as a physical barrier preventing the passage of blood, is standard practice in some countries (11). The study by Knepil and Blackburn (12) found a prevalence of use in the United Kingdom of 39%, while 52% were intermittent users and only 9% were never users. Although the available evidence is insufficient to justify the use of pharyngeal packs, many surgeons and anesthesiologists continue to use such packs during oral, nasal, and maxillofacial surgical procedures because of past experience, and have recommended different materials and packing types (2,4,11).

Although there has been no study to date reporting the rate of use of nasopharyngeal packing in our country, it is routinely used in many clinics in daily practice (11-13). Temel et al. (14), in their 2019 study, stated that pharyngeal packing reduced the increase in gastric volume associated with perioperative blood swallowing in elective nasal surgeries and that the method could be considered useful and safe for the reduction of the risk of perioperative pulmonary aspiration in such surgeries. However, there are opposing views stating that pharyngeal packing has no effect on PONV, contrary to the intended effect, and that there is potential for damage to the pharyngeal mucosa and postoperative sore throat, and even life-threatening complications (2,3,5,6,15-18). The study by Basha et al. (15) of 100 patients showed that pharyngeal packing had no effect on the incidence of PONV but increased the incidence of sore throat significantly, while opting not to carry out pharyngeal packing did not increase postoperative aspiration or vomiting. Many other studies, such as those by Korkut et al. (10), Meco et al. (13), Razavi et al. (17), Piltcher et al. (18) and Green et al. (19), have reached similar findings at different times. Piltcher et al. (18) reported no difference in the incidence of PONV between their pharyngeal packing group and their control group, in which no additional precautions were taken. Contrary to classical empirical thinking, this study argues that blood swallowing during surgery may not be a determinant of PONV. Furthermore, there have also been studies reporting that the removal of blood from the stomach using different methods, such as perioperative orogastric aspiration, also has no effect on PONV (20-22). It is also quite likely that besides

Table 3. Evaluation of postoperative complications by groups

Postoperative complications			Group 1, (n=30)	Group 2, (n=30)	Test value; χ^2	p
			n (%)	n (%)		
Nausea-vomiting (PONV)	Postoperative hour 0	No	17 (56.7)	15 (50.0)	1.776	[c]**0.586**
		Mild	13 (43.3)	13 (43.3)		
		Moderate	0 (0)	2 (6.7)		
	Postoperative hour 6	No	22 (73.3)	20 (66.7)	2.139	[c]**0.410**
		Mild	3 (10.0)	7 (23.3)		
		Moderate	5 (16.7)	3 (10)		
	Postop.hour24	No	27 (90.0)	28 (93.3)	0.218	[d]**1.000**
		Mild	3 (10.0)	2 (6.7)		
	Test value; χ^2		8.098	14.233		
	[f]p		**0.017**	**0.001****		
Intragroup pairs, [g]p	Postoperative hours 0-6		0.478	0.478		
	Postoperative hours 0-24		0.045*	0.020*		
	Postoperative hours 6-24		0.197	0.061		
Antiemetic use (AE)	Postoperative hour 0		0 (0)	2 (6.7)	2.069	[d]**0.492**
	Postoperative hour 6		5 (16.7)	3 (10.0)	0.577	[d]**0.706**
	Postoperative hour 24		0 (0)	0 (0)	-	-
	Test value; χ^2		10.000	2.800		
	[f]p		**0.007****	**0.247**		
Intragroup pairs, [g]p	Postoperative hours 0-6		0.019*	1.000		
	Postoperative hours 0-24		1.000	0.820		
	Postoperative hours 6-24		0.019*	0.301		
Sore throat (ST)	Postoperative hour 0		13 (43.3)	5 (16.7)	5.079	[e]**0.024**
	Postoperative hour 6		10 (33.3)	5 (16.7)	2.222	[e]**0.136**
	Postoperative hour 24		5 (16.7)	1 (3.3)	2.963	[d]**0.195**
	Test value; χ^2		12.250	5.333		
	[f]p		**0.002****	**0.069**		
Intragroup pairs, [g]p	Postoperative hours 0-6		0.582	1.000		
	Postoperative hours 0-24		0.002**	0.137		
	Postoperative hours 6-24		0.091	0.137		
Dysphagia (DSFG)	Postoperative hour 0		2 (6.7)	3 (10.0)	0.218	[d]**0.640**
	Postoperative hour 6		2 (6.7)	1 (3.3)	0.351	[d]**0.554**
	Postoperative hour 24		0 (0)	1 (3.3)	1.017	[d]**1.000**
	Test value; χ^2		2.667	4.000		
	[f]p		**0.264**	**0.135**		
Intragroup pairs, [g]p	Postoperative hours 0-6		1.000	0.250		
	Postoperative hours 0-24		0.472	0.250		
	Postoperative hours 6-24		0.472	1.000		

[c]Fisher Freeman Halton Exact test, [d]Fisher's exact test, [e]Pearson's chi-square test, [f]Friedman test, [g]Bonferroni-Dunn test, *p<0.05, **p<0.01, PONV: Postoperative nausea and vomiting

the above factors, modern surgical/anesthetic techniques and drugs has reduced the amount of bleeding compared to 20 years ago (5).

Study Limitations

Our study, like all those that came before it, could not demonstrate the superiority of pharyngeal packing over orogastric suctioning in the prevention of PONV and in the use of antiemetics. In the present study, limitations such as "comparison of different types of surgical application data, differences in operative times, the lack of information on the type of postoperative dressing, and differences in the packing localization/type" expressed by authors such as Appadurai and Tomkinson (23) against those who support the opposing view on nasopharyngeal packing were minimized through the choice of a single type of surgery - "septorhinoplasty", and using the same anesthesiology and surgical

Table 4. Evaluation of VAS and satisfaction measures by groups

				Group 1 (n=30)	Group 2 (n=30)	Test value;	
VAS	Postoperative hour 0	Median (Q^1-Q^3)		2 (0-2.25)	1 (0.75-3)	Z: -0.152	
		Mean ± SD		1.53±1.20	1.63±1.35	[h]**p: 0.879**	
	Postoperative hour 6	Median (Q^1-Q^3)		3 (2-6)	2 (2-6)	Z: -0.486	
		Mean ± SD		3.73±1.74	3.53±2.15	[h]**p: 0.627**	
	Postoperative hour 24	Median (Q_1-Q_3)		2 (2-2.25)	2 (2-2)	Z: -1.143	
		Mean ± SD		2.27±0.74	2.13±0.90	[h]**p: 0.253**	
			Total, (n=60)	**Group 1, (n=30)**	**Group 2, (n=30)**	**Test value: Z**	**[h]p**
			n (%)	**n (%)**	**n (%)**		
Satisfaction score		Median (Q_1-Q_3)	3 (3-4)	3 (3-4)	3 (3-4)	-0.480	**0.631**
		Mean ± SD	3.05±0.85	3.03±0.76	3.07±0.94		
		Score 1	4 (6.7)	1 (3.3)	3 (10.0)		
		Score 2	8 (13.3)	5 (16.7)	3 (10.0)		
		Score 3	29 (48.3)	16 (53.3)	13 (43.3)		
		Score 4	19 (31.7)	8 (26.7)	11 (36.7)		

[h]Mann-Whitney U test, [f]Friedman test, [g]Bonferroni-Dunn test, *p<0.05, **p<0.01. VAS: Visual analogue scale

teams. The generally accepted risk factors for the development of PONV in adults include a history of motion sickness or PONV, smoking status, use of inhalation anesthetics and/or nitrous oxide, intraoperative or postoperative opioid use, female gender, age, prolonged surgery, and certain types of surgical procedures (10,20). Our study established no difference in these risk factors between the groups. Furthermore, unlike researchers such as Korkut et al. (10), it was our aim to test what occurs under real conditions in the clinic through the use of the routine antiemetic/analgesic protocol in these operations. Although the PONV rate in both groups in the present study was consistent with the classical data, the absence of a control group in which no additional precautions were taken, the failure to determine the type/amount of gastric fluid aspirated by orogastric tube, and the numerical quantity of the groups can be considered limitations of our study. In our opinion, the higher incidence of PONV in ENT surgeries can be attributed to the "naso-emetic" reflex. The sensory nerves of the nose come from the ophthalmic and maxillary branches of the trigeminal nerve, and for various reasons, reflex stimuli during surgeries of the head, neck, and nose lead to vomiting because of stimulation of the vagal nucleus in the brainstem. The high incidence of PONV after nasal surgery may be a reflection of the trigeminal-vagal "naso-emetic" reflex. It is still unclear whether the vestibular input contributes directly to PONV in this reflex or whether the anesthetics used increase the sensitivity of the vestibular organ (10,11). In brief, in light of these facts, we believe PONV to be multifactorial, as previously underlined by many researchers, and cannot be prevented by nasopharyngeal packing or gastric decompression (1,18,21).

Another common complication after operations under general anesthesia is sore throat, with patients experiencing a sore throat at a rate of 10% during ventilation with a face mask, 5.8-34% with a laryngeal mask, 14.4-50% after intubation, and 61% with pharyngeal packing (24,25). The study by Elyassi et al. (25) reported that there was no significant difference in sore throat between those given conscious sedation and general anesthesia among elective rhinoplasty patients, and named the dry oxygen used during the operation and the mandatory intermittent oropharyngeal suction as the reason. Basha et al. (15) and Marais (26), on the other hand, reported that the use of pharyngeal packing caused sore throat twice as frequently, causing moderate pain that decreases over time and that can be partially controlled with analgesics. The findings of this study are consistent with those reported in the above studies. The rates of sore throat were 43.3% vs. 16.7% at postoperative 0 h in groups 1 and 2, respectively, and decreased to 33.3% and 16.7% at 6 h, and to 16.7% and 3.3% at 24 h, respectively. That said, other studies have reported different results to ours related to the prevalence of sore throat. According to Green et al. (19), patients who do not undergo pharyngeal packing experience more pain at 24 h following surgery than those with throat packing. Researchers such as Meco et al. (13) and Piltcher et al. (18), on the other hand, identified no difference in sore throat between their two groups. Following a different approach, Elhakim et al. (27) argued that sore throat could be reduced by ¼ through impregnation of the pharyngeal packing with tenoxicam rather than saline. Similarly, Vural et al. (2) recommended the use of pharyngeal packs impregnated with chlorhexidine gluconate 0.2% and benzydamine hydrochloride 0.15% for the same purpose, claiming that this method improves patient comfort and reduces sore throat.

It is known that pharyngeal packing can lead to localized trauma and inflammation of the mucosa (11), which in our opinion is the primary cause of increased postoperative sore throat. Again, the same process may lead to other major complications, such as pharyngeal plexus injury and swelling of the tongue, while local trauma may cause PONV by stimulating the vagal nucleus in the brain. In addition, an increased analgesic requirement contributes to PONV if opioids are preferred. It has been found that edemas and their potential outcome, pain - start to decrease 2 h after the operation (11). In our study, sore throat also decreased in both groups over time. Although most studies have tried to define, the common limitation of both the present study and earlier studies is that a standard scale has not been developed for the measurement of sore throat (11), which severely limits the comparison of data reported in different studies, making its reliability questionable.

Conclusion

Contrary to the findings of researchers such as Erkalp et al. (6) (Aphthous stomatitis), Meco et al. (13), Smarius et al. (28), Seraj et al. (29) (airway soiling) and Fine et al. (30) (voice hoarseness), we did not observe any serious complications with nasopharyngeal packing, except for PONV and sore throat in the early or late postoperative period. We also did not encounter any life-threatening dramatic events such as pack migration or forgotten packs. In previous studies of this issue, the most common reasons for forgotten packs are forgetting the nasopharyngeal pack placement, inadvertent statements of removal by the surgeon, change of anesthesiologist during a long operation, inexperienced anesthesiologist in head/neck surgery, removal of fewer packs than placed, and earlier awakening of the patient from anesthesia than planned (12). We believe that we have not experienced such complications due to the experience of our ENT/anesthesiology teams and the availability of routine control/follow-up charts in our clinic, in line with the recommendations of Knepil and Blackburn (12). We should also state that the relatively low number of patients is also a limiting factor in our encountering of very rare complications.

The secondary aim of our study was to assess how the choice of method affected the postoperative pain score (VAS) and patient satisfaction. No VAS score of ≥4, which can be defined as pain, was reported by any of our patients, and there was no difference in the level of satisfaction of the two patient groups. We believe our routine analgesic and antiemetic protocol to be sufficient for the control of both PONV and pain, contributing to this finding. Furthermore, septorhinoplasty, which was the surgical approach selected for the study, is not a very painful surgical procedure, and we believe that the patients undergoing surgery at their own request and not out of necessity contributed to these findings.

In conclusion, routine packing practice should be abandoned by anesthesiologists. Given that pharyngeal packing itself is not a completely risk-free procedure, we do not recommend intraoperative packing during nasal surgery. If anesthesiologists are to routinely continue pharyngeal packing in operations in this region, they should do knowing that there is no objective evidence to support the practice. That said, nasopharyngeal packing as a surgical requirement may be needed for some orthognathic operations. For its limited use in such cases, each clinic should develop written protocols, checklists, and observation forms relating which operations require which principles are to be followed, with the participation of the surgical and anesthesia teams considering their surgical needs. If its use is decided, all materials should be included in the surgical (scrub) count, and it should be ensured that all materials are removed before extubation with a matching count. Anesthesia should be at a depth that will allow all these examinations and interventions to be completed, even if the operation is completed (30). Regardless of the method used, it should not be forgotten that the anesthesiologist is responsible for the examination of the oral cavity and throat with direct laryngoscopy and, if necessary, aspiration before extubation.

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Ethics Committee Approval: This randomized, prospective study of ASA I patients aged 18-50 years who were scheduled for elective septorhinoplasty in a university hospital's ENT clinic was launched after the granting of İstanbul Medipol University Ethics Committee approval (approval number: 611, date: 03.06.2021).

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