

ORIGINAL ARTICLE

LA with monitored anesthesia care and LA after induction of GA for patients undergoing functional endoscopic sinus surgery

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ABSTRACT:

Background: Sinusitis is one of the most common health complaints leading to a physician visit in the United States, as well as one of the leading causes of antibiotic prescriptions. The present study was conducted to compare LA with monitored anesthesia care and LA after induction of GA for patients undergoing functional endoscopic sinus surgery. **Materials & Methods:** 50 patients of chronic sinusitis scheduled for functional endoscopic sinus surgery of both genders were divided into 2 groups of 25 each. Group I received LA with monitored anesthesia care and group II patients received LA after induction of GA. Parameters such as operative time, surgical time, bleeding, MAP, heart rate and complications were recorded in both groups. **Results:** The mean operative time was 71.2 minutes in group I and 96.2 minutes in group II. Surgical time in group I was 47.2 minutes and in group II was 43.6 minutes. Bleeding time score 0 was seen in 23 in group I and 22 in group II and score 1 in 2 patients in group I and 3 patients in group II. The difference was significant ($P < 0.05$). Diclofenac requirement (mg) was 73.6 in group I and 75.9 in group II, time to PACU discharge (mins) was 13.1 in group I and 43.2 in group II, time to home discharge (mins) was 62.1 in group I and 224.5 in group II. The difference was significant ($P < 0.05$). Common complication was nausea seen in 2 in group I and 4 in group II, sore throat 5 in group I and 25 in group II, dental numbness 2 in group I and 1 in group II, vomiting 4 in group I and 5 in group II, and headache 3 in group I and 4 in group II. The difference was non-significant ($P > 0.05$). **Conclusion:** For patients undergoing functional endoscopic sinus surgery, LA combined with monitored anesthesia care produced excellent surgical and postoperative profiles.

Key words: Functional endoscopic sinus surgery, Headache, monitored anesthesia care

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INTRODUCTION

Sinusitis is one of the most common health complaints leading to a physician visit in the United States, as well as one of the leading causes of antibiotic prescriptions. The newer term is rhinosinusitis because purulent sinus disease without similar rhinitis is rare.¹ Acute rhinosinusitis is sudden onset, lasting less than 4 weeks with complete resolution. Subacute rhinosinusitis is a continuum of acute rhinosinusitis but less than 12 weeks. Recurrent acute rhinosinusitis has four or more episodes of acute, lasting at least 7 days each, in any 1-year period. Chronic rhinosinusitis persists 12 weeks or longer.²

As one of the most popular ambulatory rhinologic procedures, functional endoscopic sinus surgery (FESS) aims to restore paranasal sinus flow through the surgical management of sinusitis utilizing nasal endoscopes.³ Currently, the most popular kind of surgery for persistent rhinosinusitis is functional endoscopic sinus surgery (FESS). Being minimally invasive, FESS requires no open incision and is far less invasive than other surgical techniques. Excessive bleeding has generally been found to compromise the safety and effectiveness of surgical sinus

manipulation; as such, it is anesthetic importance to perform a technique that maximizes surgical field, minimizes surgical risk, and increases satisfaction for both surgeons and patients.⁴ The anesthesiologist should be experienced with total intravenous anesthesia (TIVA), comprehend some of the special anesthetic goals for FESS, and serve as an informed consultant for optimal patient selection and preparation.⁵ Using a laryngeal mask airway, endotracheal tube, or local anesthetic (LA) following the induction of general anesthesia (GA), FESS can be carried out under monitored anesthesia care (MAC), general anesthesia (GA), inhaled anesthesia, or total intravenous anesthesia. The majority of FESS procedures take place in free-standing ambulatory surgical centers, which brings with it additional challenges because of the need to provide high-quality, cost-effective care while also managing variability in monitoring modalities and anesthesia equipment.⁶ The present study was conducted to compare LA with monitored anesthesia care and LA after induction of GA for patients undergoing functional endoscopic sinus surgery.

MATERIALS & METHODS

The present study comprised of 50 patients of chronic sinusitis scheduled for functional endoscopic sinus surgery of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 25 each. Group

I received LA with monitored anesthesia care and group II patients received LA after induction of GA. Parameters such as operative time, surgical time, bleeding, MAP, heart rate and complications was recorded in both groups. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Intraoperative parameters

Parameters	Group I	Group II	P value
Operative time (mins)	71.2	96.2	0.05
Surgical time (mins)	47.2	43.6	0.84
Bleeding (score 0)	23	22	0.05
Bleeding (score 1)	2	3	

Table I, graph I shows that mean operative time was 71.2 minutes in group I and 96.2 minutes in group II. Surgical time in group I was 47.2 minutes and in group II was 43.6 minutes. Bleeding time score 0 was seen in 23 in group I and 22 in group II and score 1 in 2 patients in group I and 3 patients in group II. The difference was significant (P< 0.05).

Graph I Comparison of parameters

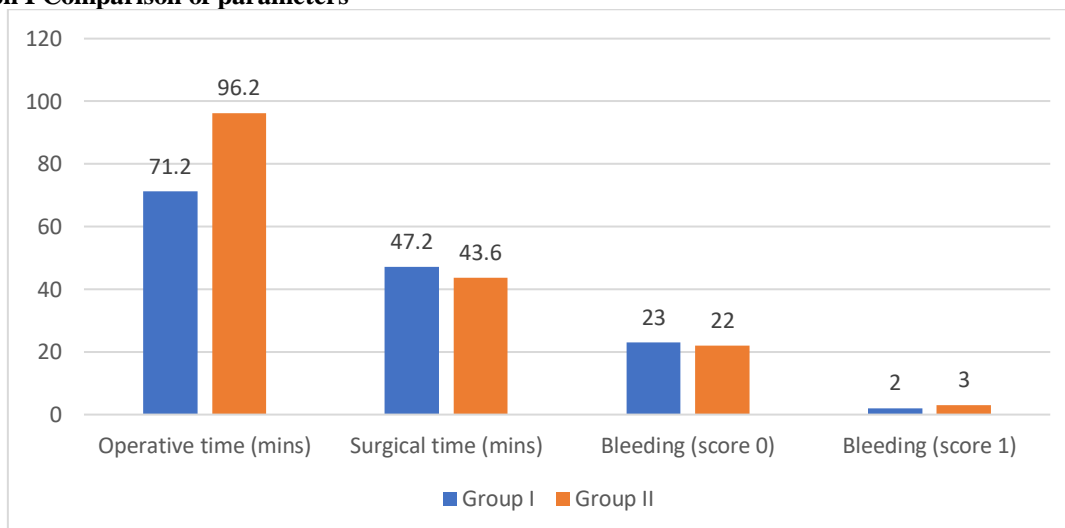


Table II Comparison of parameters

Parameters	Group I	Group II	P value
Diclofenac requirement (mg)	73.6	75.9	0.87
Time to PACU discharge (mins)	13.1	43.2	0.01
Time to home discharge (mins)	62.1	224.5	0.01

Table II shows that Diclofenac requirement (mg) was 73.6 in group I and 75.9 in group II, time to PACU discharge (mins) was 13.1 in group I and 43.2 in group II, time to home discharge (mins) was 62.1 in group I and 224.5 in group II. The difference was significant (P< 0.05).

Table III Complications

Complications	Group I	Group II	P value
Nausea	2	4	0.81
Sore throat	5	25	
Dental numbness	2	1	
Vomiting	4	5	
Headache	3	4	

Table III shows that common complication was nausea seen in 2 in group I and 4 in group II, sore throat 5 in group I and 25 in group II, dental numbness 2 in group I and 1 in group II, vomiting 4 in group I and 5 in group II, and headache 3 in group I and 4 in group II. The difference was non-significant (P> 0.05).

DISCUSSION

Sinusitis is defined as a condition manifested by inflammation of the mucous membranes of the nasal cavity and paranasal sinuses, fluids within these cavities and/or the underlying bone. Chronic rhinosinusitis is sinusitis lasting more than 12 weeks of persistent symptoms and signs with no complete resolution.⁷ If there is an anomaly in the osteomeatal complex, the main sinuses' normal draining and ventilation are typically affected. This is the main sinus drainage channel, and because it is the narrowest, obstructions from pathologies in the paranasal sinuses and nose are more likely to form here.⁸ The goals of functional endoscopic sinus surgery (FESS) are to restore as much of the anatomical structures and physiological function of the paranasal sinuses and nose as well as to address the underlying pathology.^{9,10} One of the most popular surgical procedures carried out in the US is endoscopic sinus surgery. The number of cases of functional endoscopic sinus surgery (FESS) to treat chronic rhinosinusitis has increased as a result of the increased use of precise, image-guided surgery, which has also improved patient safety.^{11,12} The present study was conducted to compare LA with monitored anesthesia care and LA after induction of GA for patients undergoing functional endoscopic sinus surgery.

We found that the mean operative time was 71.2 minutes in group I and 96.2 minutes in group II. Surgical time in group I was 47.2 minutes and in group II was 43.6 minutes. Bleeding time score 0 was seen in 23 in group I and 22 in group II and score 1 in 2 patients in group I and 3 patients in group II. Hassan and Ehab¹³ evaluated the efficacy of sphenopalatine ganglion block (SPGB) combined with GA compared with GA alone; they found that the number of patients requiring esmolol was significantly higher in the nonblocking group.

We observed that diclofenac requirement (mg) was 73.6 in group I and 75.9 in group II, time to PACU discharge (mins) was 13.1 in group I and 43.2 in group II, time to home discharge (mins) was 62.1 in group I and 224.5 in group II. Common complication was nausea seen in 2 in group I and 4 in group II, sore throat 5 in group I and 25 in group II, dental numbness 2 in group I and 1 in group II, vomiting 4 in group I and 5 in group II, and headache 3 in group I and 4 in group II. Miłoński J et al¹⁴ assessed the effect of three different types of anaesthesia on perioperative bleeding control and to analyse the mean arterial blood pressure and heart rate in patients undergoing endoscopic paranasal sinus surgery. Ninety patients (30 women and 60 men, aged 18-85 years) scheduled to undergo functional endoscopic sinus surgery in the years 2008-2010 were identified as candidates for inclusion in the study. Patients were randomly assigned to one of three groups (30 patients each) according to the type of general anaesthesia to be administered. Groups I and II both received inhalation

anaesthesia (sevoflurane for sedation) and intravenous anaesthesia (fentanyl in group I, remifentanyl in group II). Anaesthesia was delivered solely via intravenous route (TIVA) in group III, with propofol used for sedation and remifentanyl for analgesia. Blood pressure and heart rate were monitored during surgery and post-surgically for 4 h. Mean anaesthesia duration in groups I, II and III was 108.7 ± 20.8 , 112.6 ± 22.2 and 103.7 ± 17.5 min and the surgery duration was 71.3 ± 16.7 , 78.8 ± 24.2 and 66.5 ± 15.5 min, respectively. Mean blood loss during surgery was 365.0 ± 176.2 , 340.0 ± 150.5 and 225.0 ± 91.7 ml, with a mean blood loss rate of 5.1 ± 2.4 , 4.5 ± 2.2 and 3.4 ± 1.1 ml/min in groups I, II and III, respectively. Technologically advanced control of the drug dose with the TIVA technique allows for better control of perioperative bleeding.

CONCLUSION

Authors found that for patients undergoing functional endoscopic sinus surgery, LA combined with monitored anesthesia care produced excellent surgical and postoperative profiles.

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