



Egyptian Society of Anesthesiologists
Egyptian Journal of Anaesthesia

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Research Article

Comparison of post-operative recovery with or without pre-extubation throat wash in patients undergoing intranasal surgery under general anaesthesia[☆]



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Received 26 July 2014; accepted 8 September 2015

Available online 28 September 2015

KEYWORDS

Rhinoplasty;
Intranasal surgeries;
Laryngospasm;
Pulmonary oedema;
Postoperative complications

Abstract *Background:* Intranasal surgery under general anaesthesia has potential to complicate immediate postoperative recovery period with multitude of respiratory problems. These include from mild respiratory distress to oxygen desaturation to moderate to significant laryngospasm. These problems can be mitigated by employing some innovative manoeuvres by anaesthesiologists to achieve smooth and safe recovery.

Study setting: The study was conducted at PAF Hospital MM Alam after permission from the hospital ethics committee from March 2013 to December 2013.

Level of evidence: The study conforms to level 1b of evidence rating scale.

Study design: This randomised control trial included 120 American Society of Anaesthesiologists physical status I patients aged less than 40 years of both genders, undergoing intranasal surgery under general anaesthesia, who were randomly divided into two groups naming Throat Wash (TW) group or Simple Suction (SS) group. Patients of both groups were induced general anaesthesia as per set protocol while TW group was subjected to throat wash after removal of throat pack while SS group was only suctioned under direct laryngoscopy. Incidence of any adverse respiratory event in immediate post-extubation period was recorded for further comparison.

[☆] Institution where Study was carried out: Pakistan Air Force Hospital, MM Alam, Pakistan.

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Peer review under responsibility of Egyptian Society of Anesthesiologists.

Results: 1.6% patients in TW group developed laryngospasm as compared to 15% patients of SS group ($P < 0.0001$). 4.8% patients of TW group and 44.9% patients of SS group developed moderate to significant respiratory problems respectively ($P < 0.0001$). 5% patients in SS group had to re-intubated as compared to none in the TW group ($P < 0.00001$). Debris recovered during throat wash in TW group included clogs of blood, pieces of bones, cartilage and polyps, rhinolith, and wax from the packing gauze as compared to only some clots of blood in the SS group.

Conclusion: Throat wash, after removal of throat pack in nasal surgery, ensures clearer airway and decreases the risk of adverse respiratory events in immediate post-extubation period. The adverse sequel due to un-recognised debris in the upper airway is minimised resulting in smooth recovery and rapid discharge from the post-anaesthesia care unit.

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1. Introduction

Septal surgery is undertaken to improve airflow through the nasal passages and ventilation of the sinuses. Patients present for surgery owing to near-total nasal airway obstruction due to gross septal deviation, inferior turbinate hypertrophy, or a single or multiple nasal polyps or surgery for cosmetic reasons, etc. [1]. Some nasal procedures can be performed under local anaesthesia with or without sedation, and others usually require general anaesthesia [2–4]. The choice of general or local anaesthetic depends on patient factors, duration and site of surgery, and complexity of the procedure. Generally, local anaesthesia is suitable for minor or more anterior procedures while for more complex or longer procedures, including partial or total inferior turbinectomy, intranasal polypectomy, submucosal resection (SMR) of septum, septoplasty and augmentation septorhinoplasty is general anaesthesia is preferred by many otorhinolaryngologists due to the risk of complications [5].

Nearly all nasal surgery has the potential to contaminate the lower airway with blood or secretions and debris such as blood clot/cartilage/bone remnants, rhinolith, paraffin wax and mucous plugs. It is essential that the anaesthesiologist recognises this and takes measures to prevent it. A south-facing or reinforced tracheal tube is often used with a throat pack to reduce blood contamination of the lower airway [6]. Throat pack is an essential part of nasal surgery as it prevents blood and debris from entering into laryngopharynx as well as blood being getting into the stomach which may result in post-operative nausea and vomiting. At the end of surgery, the pack should be carefully removed and noted.

At the conclusion of the surgery, the nasal airway is often blocked with surgical packs which may make it extremely difficult to maintain an airway. Extubation of a tracheal tube is usually undertaken with the patient “awake” or “deep”, each having its own pro and cons so the decision has to be individualised [7]. Many anaesthesiologist must have experienced an increased incidence of coughing, laryngospasm, explained and unexplained oxyhemoglobin desaturation early after extubation and rarely may have seen development of negative pressure pulmonary oedema due to severe laryngospasm in patients undergoing the nasal surgery [8,9]. The patients complicated by these adverse events often require re-intubation, ventilation and sometimes ICU admission prolonging their length of hospital stay considerably increasing the cost.

Measures to achieve safe and smooth recovery from anaesthesia without any adverse sequel include direct laryngoscopy

and pharyngoscopy in every patient, and a careful inspection of the oral cavity and postnasal area. There should be flexion of neck to encourage any clot to fall past the soft palate, and direct visualisation of the passage of a suction catheter behind the soft palate. Any clot or debris left behind can be inhaled after removal of a tracheal tube and lead to total airway obstruction and death—hence the term “coroner’s clot” [6].

We have investigated the addition of post-operative throat wash with copious amounts of normal saline after removal of throat pack and before awakening the patient from general anaesthesia under direct laryngoscopy.

2. Objective

The objective of this study was to compare post-operative recovery with or without pre-extubation throat wash in patients undergoing intranasal surgery under general anaesthesia.

3. Study setting

The study was done at Pakistan Air Force Hospital MM Alam from March 2013 to December 2013 in Operation Theatre department in collaboration with ENT department.

4. Materials and methods

This parallel type randomised control study was conducted after taking written permission from hospital ethics committee subsequent to a thorough presentation on study proposal. Their concern about the patient confidentiality was adequately addressed. One hundred and twenty American Society of Anaesthesiologists (ASA) physical status I patients of both sexes, aged 40 years or less, undergoing Sub-mucosal Resection (SMR) of septum/septorhinoplasty/rhinoplasty were included in the study. Any patients with significant respiratory or cardiac disease, moderate to severe OSA, history of airway reactivity or any other comorbidity were excluded from the study. The patients were randomly selected (using random number generator) to receive throat wash [Throat Wash Group (TW group)] or simple suction [Simple Suction group (SS group)].

All the patients were admitted to the hospital one day before the scheduled surgery. Routine clinical chemistry tests and hepatitis B and C screening were performed as per the

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