



Research Article

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Effect on patient anxiety of lidocaine infiltration into nasal packing after septoplasty: a prospective, case-control study

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Abstract

Objective: The effect on patient anxiety of lidocaine infiltration into nasal packing following septoplasty was investigated by this prospective, case- control study. **Methods:** 60 patients, who underwent septoplasty operation with bilateral merocele nasal packing were included in this study. Nasal packs were infiltrated with 0.9% saline (5 mL in each nostril) for 30 patients and remaining 30 were infiltrated with 2% xylocaine (5 mL in each nostril), 15 minutes before nasal pack removal. Patient anxiety levels were measured at various time points i.e. 24 hours pre-operatively, 48 hours post operatively, 30 minutes after pack removal. Patients marked their level of pain on a visual analogue scale during pack removal. **Results:** Hamilton Anxiety Scale scores for saline infiltration patients were found to be (Mean \pm SD) 12.3 \pm 5.35, 16.23 \pm 5.12 and 14.23 \pm 4.55 for 24 hours pre-operatively, 48 hours post operatively, 30 minutes after pack removal respectively. The respective scores for lidocaine infiltration patients were: 13.83 \pm 4.46, 17.07 \pm 3.98 and 11.7 \pm 3.52. at 24 hours before surgery, 48 hours after surgery and 30 minutes after pack removal. The visual analogue scale pain score was 5.6 \pm 0.89 for Saline study group and 7.13 \pm 0.73 in the lidocaine study group. **Conclusion:** Patient pain was significantly reduced following infiltration of lidocaine into nasal packing. Patients developed mild to moderate anxiety before nasal packing removal. Use of techniques without nasal packing like soluble packs or quilting methods after septoplasty for patient comfort can be recommended after septoplasty to ease patient post-operative discomfort.

Keywords: Anxiety, Septoplasty, Hamilton Anxiety Scale, visual analogue scale.

INTRODUCTION

Septoplasty is a frequently performed surgical procedures in otorhinolaryngology clinics and is usually indicated when the patient is symptomatic either as a direct result of the septal deviation, or for the purpose of surgical access. Following septal surgery nasal packs are commonly inserted to support septal flap apposition as well as to close dead space between flaps and cartilage or bone of the septum and to avoid synechia formation. For nasal packing different type of materials have been used, most commonly used material is merocele, because of their ease of use. Pack removal is a painful procedure. Septoplasty patients worry about the pain and discomfort that they have to go through during nasal packing and its removal [1]. Patient's concern about pain before nasal packs removal, increases anxiety levels. Various methods are being tried to reduce this pain, and research is ongoing. The infiltration of lidocaine before packing removal may reduce the pain experienced few studies have already been done regarding this [2]. Patients are usually concerned of pain before nasal pack removal and this increases anxiety levels of patients. Prevention of this anxiety affects patient's quality of life, positively. Patient's anxiety levels can be measured objectively using various tests (eg. State-Trait Anxiety Inventory, Hamilton Anxiety Scale and Hospital Anxiety and Depression Scale) [3]. This prospective case-control study aims to investigate the effect of lignocaine infiltration into nasal packing before its removal, on patient anxiety (using the Hamilton anxiety scale), and on pain which occurs during nasal pack removal (by using the visual analogue scale).

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MATERIALS AND METHODS

This prospective case-control study comprised 60 patients who underwent septoplasty for nasal septum deviation. Patients with any additional nasal or paranasal pathology like nasal polyposis, concha bullosa, were excluded from the study. Patients suffering from or taking treatment for any psychiatric disorder were also excluded from study. Detailed informed consents were taken from patients regarding surgery and the study. Patient's anxiety levels were measured using the Hamilton Anxiety Scale. All the patients underwent septoplasty under local anesthesia after undergoing lignocaine sensitivity tests. After surgery each nasal cavity of the patient was packed with standard 8 cm long Merocele pack without airway, and kept for 48 hrs.

Patients were randomly divided into two groups after the operation. The nasal packs were infiltrated with 10 mL of 2% lidocaine in 30 patients and with 10 mL of 0.9% normal saline in the remaining 30 patients. The length of time between infiltration and pack removal was 15 minutes. Patient anxiety levels were measured at the following time points: 24 hours pre-operatively; 48 hours post-operatively, before saline or lidocaine infiltration; and 30 minutes after lidocaine or saline infiltration into the packing.

Using needle of a syringe containing 10 mL of saline or 2 per cent lidocaine was inserted into each nasal pack without contacting septum or nasal mucosa. 5 mL of lidocaine or saline was infiltrated into each nasal pack of cases and controls respectively. The septum and nasal mucosa was in contact with the anaesthetic lidocaine or saline via the surface of the nasal packs.

Patients were explained and then asked to mark their level of pain during pack removal on a visual analogue scale (VAS). The VAS was formulated as a 10 cm column, with the lower end of the column representing no pain and the most severe pain was corresponded to the upper end. The scores indicated by the marks on the scale were measured in millimeters.

Statistical Analysis

Categorical variables were presented in number and percentage (%) and continuous variables were presented as mean \pm SD and median. Normality of data was tested by Kolmogorov-Smirnov test. If the normality was rejected then non parametric test was used.

Statistical tests were applied as follows-

1. Quantitative variables were compared using Independent T test/Mann-Whitney Test (when the data sets were not normally distributed) between the two groups and Paired t test/Wilcoxon test was used for comparison within group across follow up.
2. Qualitative variables were correlated using Chi-Square test.

A p value of <0.05 was considered statistically significant.

The data was entered in MS EXCEL spreadsheet and analysis was done using Statistical Package for Social Sciences (SPSS) version 21.0.

RESULTS

Total 60 patients were included of which 24 were female and 36 were male, there were 13 females and 17 males in study arm and in control arm, 11 female and 19 males participated. The Hamilton Anxiety Scale scores (Mean \pm SD) for patients with lidocaine infiltration study group, were observed to be 13.83 ± 4.46 , 17.07 ± 3.98 and 11.7 ± 3.52 at 24 hours before surgery, 48 hours after surgery and 30 minutes after pack removal respectively whereas, for Saline study group scores (Mean \pm SD) were found to be 12.3 ± 5.35 , 16.23 ± 5.12 and 14.23 ± 4.55 respectively for each time period. There was no significant difference in the total score at 24 hours before surgery when compared between two infiltrations used (p-value = 0.233). For total score recorded at 48 hours after surgery, p-value was 0.485 which also indicated that there was no statistically significant difference between two infiltrations used. However, there was significant difference between lignocaine group and saline group when compared 30 minutes after pack removal (p-value = 0.019) with higher score in saline group as compared to lignocaine.

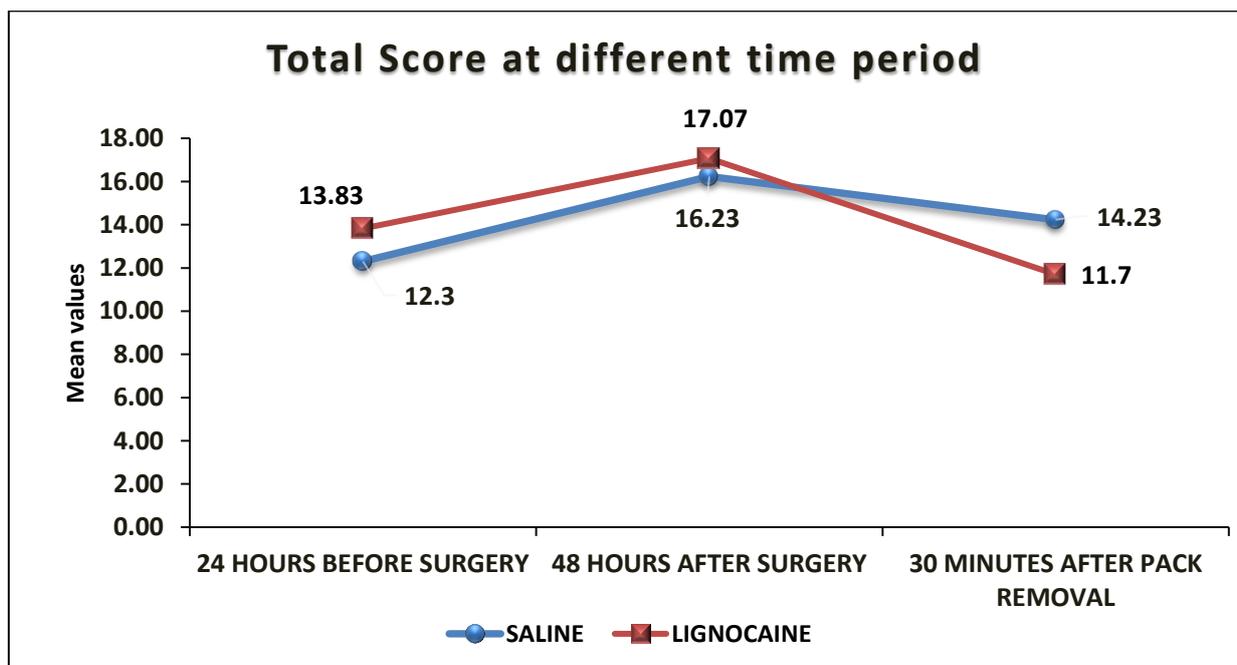


Figure 1: Total score at different time periods

Table 1: Total Hamilton Anxiety Scale Score -Inter group comparison

TOTAL SCORE	LIGNOCAINE (Mean ± SD)	SALINE (Mean ± SD)	P value
24 HOURS BEFORE SURGERY	13.83 ± 4.46	12.3 ± 5.35	0.233
48 HOURS AFTER SURGERY	17.07 ± 3.98	16.23 ± 5.12	0.485
30 MINUTES AFTER PACK REMOVAL	11.7 ± 3.52	14.23 ± 4.55	0.019

The Visual Analogue Score (VAS) of pain (Mean ± SD) was 5.6 ± 0.89 in the lidocaine study group and was 7.13 ± 0.73 in the control saline group. A statistically significant difference was determined between the groups (p value < 0.001) signifying difference in VAS of patients when compared between two infiltrations used with significantly higher score in saline group as compared to lignocaine.

DISCUSSION

Nasal packing has been used by otorhinolaryngologists since long time, hoping to decrease the incidence of post septoplasty complications. Stabilization of remaining cartilage to prevent postoperative deviation is one of the main reasons that packing may be used. Removal of this nasal pack in the postoperative period causes discomfort to the patients. The infiltration of topical anaesthetics prior to nasal pack removal may reduce the pain experienced.⁴

Merocel packs are easy to use tampons that provide effective control of bleeding after surgery.⁵ This study checked the effect on patient anxiety of lignocaine impregnation into nasal packing before pack removal following septoplasty using Hamilton Anxiety Scale, also evaluated the relation to the pain experienced at the time of pack removal. Studies show that removal of Merocel nasal packing 24 hours after surgery causes less pain compared to removal after 48 hours.⁶ The use of intramuscular opiate before removal of packing, infiltration of lidocaine into the packing before removal, the use of analgesics and sphenoplatine ganglion blockade methods have all been described in previous studies.⁷ The pre-emptive analgesia decreases pain during removal of nasal packing placed in septoplasties and increases patient comfort.⁸ Few studies recommended soluble packings or sewing techniques without nasal packings after septoplasty because of patient comfort after operation.⁹

The Hamilton Anxiety Scale was described by Max Hamilton as a means to objectively measure anxiety in patients.³ A score of 17 or less indicates mild anxiety, 18 – 24 indicates mild to moderate anxiety, and 25 – 30 indicates moderate to severe anxiety [1]. In this study, the anxiety levels of the patients measured as mild to moderate in both study and control group, ranging between 2 and 29. There is no statistically significant difference between pre and postoperative evaluations. However, there is a significant fall in total score in the study group 30 minutes after nasal pack removal compared to the control group (p-value 0.019).

The average Visual Analogue Score (VAS) of pain at the time of nasal pack removal in study group (lignocaine) is 5.6 ± 0.89, whereas for the control group (saline) it is 7.13 ± 0.73 having a p-value of <0.0001, it can be concluded that there was significant difference in VAS of patients when compared between two infiltrations used with significantly higher score in saline group as compared to lignocaine group. In lignocaine group, no correlation exist between VAS and total anxiety score as correlation coefficient is 0.0496, whereas mild positive non-significant correlation exist between VAS and total score in saline group with correlation coefficient of 0.27.

CONCLUSION

There are few studies about nasal septal surgery and patient anxiety. The patient anxiety significantly decreases after nasal pack removal. Impregnation of lignocaine into nasal packing reduces pain on pack removal significantly according to VAS scores.

We recommend soluble packs or quilting methods after septoplasty for patient comfort. If nasal packing is used, lignocaine infiltration into the packing prior to pack removal is good for patient comfort.

Conflict of Interest – The authors declare that they have no conflict of interest.

Ethical Approval – All procedures involving human participants were in accordance with the ethical standards of the institution.

Informed Consent – Informed consent was obtained from all individual participants included in this study.

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