Open Access Journal

Indian Journal of Medical Research and Pharmaceutical Sciences

August 2020;7(8) ISSN: ISSN: 2349-5340

DOI: https://doi.org/10.29121/ijmrps.v7.i8.2020.3 Impact Factor: 4.054

THE EFFECT OF 10 % LIDOCAINE SPRAYED TO NASAL PACKS ON PAIN AFTER ELECTIVE SEPTOPLASTY

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Keywords: *10% Lidocaine, Postoperative pain, Nasal packing, Septoplasty.*

Abstract

Aim

To study analgesic effect of lidocaine10 % sprayed to 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal packing using visual analog scale (VAS) in postoperative period for patients underwent septoplasty operation.

Materials and methods

100 patients aged between 17 and 50 years and divided into two equal groups. Group L lidocaine 10% was sprayed to gauze swabs with neomycin and bacitracin ointment nasal packing and group S control group 0.9% NaCl applied to same nasal packing. Postoperatively, VAS scale, side effects and analgesic requirements were recorded.

Results

There were no differences between the number of female and male patients. Postoperative pain was less in group L than group S, there was a statistically significant difference between L group and S group ($p < 0.05$). The patient in the S group needs more rescue drug. L group had significantly better pain score versus S group at all intervals (2, 6, 12, 18, and 24) postoperative period.

Conclusion

Lidocaine 10% sprayed to 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal pack provide better analgesic effect and reduced needs to analgesic requirement after septoplasty surgery.

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Introduction

Septoplasty operation is one of the most applied operations in otolaryngology clinics [1]. Nasal packs used to reduce the postoperative hemorrhage after septoplasty [2] .Postoperative stabilization of bone tissue and cartilage also may cause pain [3, 4]. Pain after septoplasty is one of most important problems in the first 24h. The appropriate management of postoperative pain lead to decreases lengths of hospital stay, complications associated with pain , improves the comfort of the patients, decrease side effects and doses of drugs used [5].

Nasal packing's increase the pain associated with surgery [6]. Pain intensity is mild to moderate in the postoperative period. Paracetamol and (NSAIDs) are commonly used to reduce pain in postoperative periods [7]. Lidocaine is local anesthetic drug in amide group. Lidocaine effective in infiltration anesthesia and for nerve block. The beginning effect is rapid, duration is medium, it penetrates the tissues rapidly [1]. The lidocaine is a local analgesic of which analgesic activity has been proven in different forms of administration [8].

Materials and methods

The approval of the ethical committee was obtained. 100 patients scheduled for septoplasty at King Talal Hospital between Jan 2018 and Jan 2019. Patients with nasal concha bullosa, polyposis or any Para nasal pathology were excluded.

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Operations were done under general anesthesia by different operator, no local anesthesia were used preoperatively. Infiltration of adrenalin 1:100,000 were used to control bleeding at incision site at the beginning of the operation. Our patients were divided into two groups. Group L (n=50) lidocaine 10% was sprayed to 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal packing and group S (n=50) 0.9% NaCl was applied to 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal packing's. In postoperative period, VAS (visual analog scale) scores, side effects and additional analgesic requirements were recorded for the first 24 h starting from the 2nd hour postoperatively.

Nasal cavities were packed with 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment packs sprayed with 10% lidocaine. The control group 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal packs were socked with 0.9% NaCl.

Our patients were given a form with VAS score to rate their pain starting from the 2nd , 6th, 12th, 18th and 24th hours postoperatively, where 0 means no pain and 10 means worst pain they feel. We recorded if patients need additional analgesia paracetamol or nonsteroidal anti-inflammatory analgesic.

The forms were collected at end of 24th hour's period. Mean pain scores for each group were calculated. Except pain scores of patients whom needed rescue drugs.

Statistical analysis

Categorical data were expressed in percentages and frequency; quantitative data were expressed in mean ± SD, Normality was assessed by Kolmogorov–Smirnov test, equality of variances was tested by Levene's test. Independent t test was used for group's differences on scale outcome, Chi Square was used to test proportional differences of categorical data, alpha level set at ≤0.05 considered statistically significant, a study power of 80% with medium effect size and SPSS version 22 was used to analyze data.

Results

100 patients were enrolled in this study and divided into two equal groups (10% lidocaine group vs. 0.9 NaCl group), fifty patients in each group ,in the whole sample (56%) patients were males and (44%) were females ,there were no significant differences between these groups with respect to gender distribution (p=0.687) ,Moreover the mean of age was not statistically different between 10% lidocaine and 0.9% NaCl group (26.70 vs 27.00) p= 0.793 respectively .

Table (1) Demographic data of patient's group

Variable	Lidocaine group (N=50)	0.9% NaCl group (N=50)	Percentage of both groups	P value
Gender frequency (M/F)	27/23	29/21	Male (56%) Female(44%)	0.687*
Age (mean ± SD)	26.70±5.80	27.00±5.60		0.793**

*Pearson Chi-square test (α ≤ 0.05).

**Independent t test (α ≤ 0.05)

Table (2) visual analog score (VAS) at post-operative 2, 6, 12,18 and 24 h

Post-operative period	10% Lidocaine group	0.9% NaCl group	t value	P value
	Mean ± SD	Mean ± SD		
2 H	3.65 ± 2.21	5.21 ± 2.30	3.4583	<0.001*
6 H	2.96 ± 2.05	5.08 ± 1.98	5.2598	<0.001*
12 H	2.01 ± 1.95	4.18 ± 1.88	5.6649	<0.001*
18 H	1.91 ± 1.17	3.77 ± 1.23	7.7476	<0.001*
24 H	1.05 ± 1.01	2.67 ± 1.16	7.4477	<0.001*

* statistically significance at (α ≤ 0.05)

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Table (2) indicates that the lidocaine group had significantly better pain scores verses 0.9% NaCl group at all post op VAS intervals with p<0.001 for all

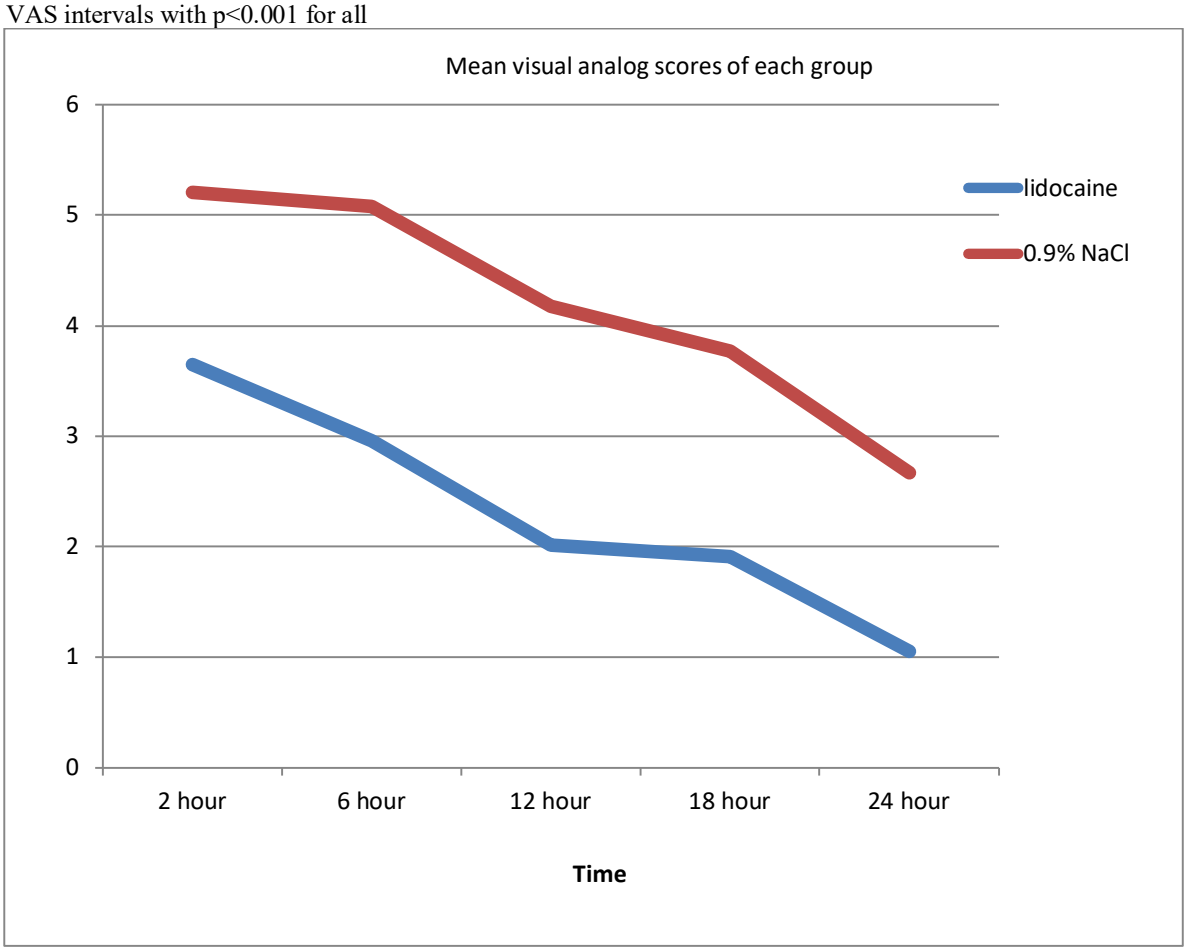

Figure (1) mean VAS of 10% lidocaine and 0.9% NaCl group

Figure (1) shows the 0.9% NaCl group pain score were remained stable at the first 6 hours then dropped steadily , while the pain score of the lidocaine group were dropped rapidly at the first 12 hours after that they were remained relatively stable at 18th hours then dropped at end of the 24th hour postoperatively.

Discussion

Septoplasty operations had mild to moderate pain in postoperative period. (NSAIDs) and paracetamol are the most commonly used drugs in this period [6].

Using (NSAIDs) and paracetamol for postoperative analgesia may cause bleeding and gastrointestinal irritation while opioids may cause nausea and vomiting [9].

Postoperative pain is caused by the surgical wound.Nasal packings used to prevent postoperative bleeding. Kuo et al. reported that lignocaine ointment applied to the nasal packings with petroleum jelly alleviate pain after septoplasty operations. Postoperative analgesic consumption was less in the lidocaine infused nasal packings with petroleum jelly group. This is due to short acting time of lidocaine [10]. In their study with 57 patients, Buchanan et al. [11]

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administered 0.9% NaCl injected merocel packings to one nasal cavity and bupivacaine injected merocel packings to the other nasal cavity.
This study evaluates the local effect of 10% lidocaine on postoperative pain control after elective septoplasty operations. We compared the two groups according to postoperative pain relief using visual analog scale (VAS).

Conclusions

Our study showed that application of 10% lidocaine spray to 10 cm x 10 cm gauze swabs with neomycin and bacitracin ointment nasal packs provides better analgesia than the 0.9% NaCl group. As a result we recommend using 10% lidocaine spray to nasal packs to decrease additional analgesics drugs uses in postoperative period and increases patient satisfaction and comfort.

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