



ORIGINAL ARTICLE

The Effect of Open Lumen Nasal Splint Tampons on Patient's Anxiety

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Abstract

Background: Removal of the tampons after nasal surgeries in the postoperative period causes stress and anxiety in the patients. This affects the results of the surgery and the recovery of the patient. In recent years, we have been using tampons that can be removed more easily. Therefore, we wanted to investigate the effects of these tampons on the patient. Our study is a prospective survey study. A total of 43 patients who underwent surgery in our clinic and had bilateral nasal packing were included in the study. "Beck Anxiety Scale" was used in the study. The patients were surveyed twice, one week before the operation and just before the tampon removal. The differences between the two questionnaires were analyzed statistically.

Results: The mean age of 43 patients was 24 years, 27 (62.8%) men and 16 (37.2%) women. The tampons of 19 (44.2%) patients were removed on the postoperative 2nd day, 16 (37.2%) patients on the 3rd day, and 8 (18.6%) patients on the 7th day. "Beck Anxiety Scale" preoperative mean score was 5 (normal), and the mean before tampon withdrawal was 10 (Mild Anxiety). A statistically significant increase was observed in the mean anxiety scores before tampon withdrawal. ($p < 0.001$).

Conclusion: This study shows that despite using nasal split tampons, tampon removal still causes anxiety in patients.

Keywords

Nasal surgery, Anxiety, Nasal split, Nasal tampons, Test anxiety scale

Background

Septoplasty is one of the most frequently performed surgical procedures in otolaryngology [1]. Nasal packing is a post-nasal surgery procedure to control bleeding, prevent septal hematoma development, and stabilize mucosal flaps [2]. However, the pain during removal of nasal packings is considered by patients to be extremely bothersome. Patients have even stated that pain during removal is the worst experience in the perioperative and postoperative period [3]. This situation causes stress in patients.

There are many types of nasal tampons using after nasal operation. Frequently used ones are: "MeroCel, Glove Finger, Doyle Splint, Sinus Pack, Surgicel". Some of these tampons are absorbable such as "Surgicel". On the other hand, non-absorbable tampons should be removed in the post-operative period. Removal time varies according to the type of tampon and the surgical procedure. For example, while the "Merosel" tampon is generally removed within the first 48 hours, the "Doyle Splint" tampon can stay in the nose for up to 7-10 days [4, 5].

Anxiety is an emotion characterized by feelings of tension and anxious thoughts for an unexplained reason. Anxiety and stress are emotions that can

negatively affect the surgical operation and recovery of the patient [6]. The incidence of preoperative anxiety in adult patients has been reported to be between 11% and 80% [7]. Among the possible causes of preoperative anxiety; being away from home and relatives, disruption of daily routines, fear of losing an organ or tissue, being disabled, not being able to wake up at the end of the surgery, post-operative pain and fear of death can be counted [8].

Our subject is the fear at the moment of removal of the nasal packing, which we see very often in nasal patients. They ask if they will feel more pain from this and it is seen that they develop anxiety. Especially since there are many stories about nasal packings used in the past, patients ask about the packings we will use. Although we told them that we use more comfortable and easily removable tampons, we saw anxiety attacks in patients. The patient focuses on nasal packing rather than surgery. In this study, we investigated the existence of this condition, which can disturb the comfort of the patient and the doctor, and thought about what precautions we could take accordingly.

From the literature review, we have seen that there are not enough studies that evaluates objectively the anxiety experienced by the patients due to tampons removal. We aimed to investigate the anxiety caused by the removal of the nasal packing using the “Beck Anxiety Inventory (BAI)” [4, 9].

Methods

Our study is a prospective survey study. Forty-six patients who underwent septoplasty or septorhinoplasty in our clinic that had bilateral nasal packing were included in our study. After the purpose and protocols of the study were explained in detail, written informed consent was obtained from each patient. This study was conducted in accordance with the ethical principles stated in the “Declaration of Helsinki” and approved by the institutional ethics committee (2011-KAEK-27/2020).

The study was done with 43 patients (27 male, 16 female; mean age 24 years; range 20-36). 24 (55.8%) patients underwent septorhinoplasty and 19 (44.2%) patients underwent septoplasty. The patients had no history of smoking and alcohol use. The tampons of 19 (44.2%) patients were removed on the 2nd postoperative day, 16 (37.2%) patients on the 3rd day and 8 (18.6%) patients on the 7th postoperative day [Table 1].

Patients with a known history of psychiatric disease, chronic and psychiatric drug use, chronic alcohol use, a history of previous surgery requiring nasal packing were planned to be excluded from the study. Bilateral Doyle splint tampons were applied to all patients at the end of the operation under general anesthesia.

Table 1: Demographic characteristics.

| Variables | Patient group (n=43) | |
|------------------------|----------------------|------|
| | n | % |
| Gender | | |
| Female | 16 | 37.2 |
| Male | 27 | 62.8 |
| Smoking-alcohol | | |
| Yes | 0 | 0 |
| No | 43 | 100 |

All patients were informed about the characteristics of the Doyle splint tampons. It was explained that since it has a silicone based structure, it is easier to remove than other types of tampons, and it gives less pain during tampon removal.

Beck anxiety inventory (BAI) was used in the study. This scale was developed by Aaron T. Beck. This questionnaire consisting of 21 questions is used to measure the level of anxiety. Each question is scored (0, 1, 2, 3) and the scores are summed to obtain a survey score between 0-63. Results are evaluated as; 0-7 Normal, 8-15 mild anxiety; 16-25 as moderate anxiety, 26-63 as severe anxiety.[6] The Turkish version of the questionnaire is available and there are studies on its validity and reliability. [9] In our study, we preferred this questionnaire because it was practical and easy to apply.

The first questionnaire was administered to the patients 1 week before the operation date, during the preoperative preparation phase. The same questionnaire was re-administered to all patients just before the removal of nasal packing. All patients were informed about the characteristics of the Doyle splint tampon and told about the expectation that it would cause less pain compared to other tampons [10].

Sample Size

The sample size required for the study was calculated based on the primary outcome variable, that is, Initial – Second anxiety scores. Sample sizes of 40 achieve 80% power to detect a median difference of 5 between the 2 matched groups with standard deviations 7.5 with a significance level of 0.05 using a 2-sided Wilcoxon signed rank test. We enrolled 43 patients (more than the required sample size) to cover any patients lost to follow-up.

Statistical analysis

Categorical variables were expressed as counts and percentages (%) whereas continuous variables were expressed as mean \pm standard deviation or median and interquartile range (IQR) due to non-normality. The Shapiro–Wilk test was used to assess the normality assumption for the continuous variables. Wilcoxon signed-rank test used to compare for matched samples in Preop – Postop anxiety scores. Categorical variables

were compared by Fisher's exact test. The Spearman's correlation was applied to test for associations between age and difference score variables. Difference in Postop-Preop anxiety scores were normally distributed; Student t test was used to test in two subgroups and ANOVA was used to test in three subgroups.

Results

Five of our patients had a hypotensive attack before tampon removal, three of our patients had a panic attack and bleeding afterwards. These conditions, which are related to tampon anxiety, put more strain on the patient and the doctor than surgery.

Initial beck anxiety scale scores were evaluated; 28 (65.1%) patients were within normal limits, 11 (25.6%) patients had mild anxiety, and 4 patients (9.3%) had moderate anxiety. The mean of the initial BAI scores of 43 patients was found to be 5 (1-9). This value is within normal limits (0-7).

The second beck anxiety scale scores, that surveyed before tampon removal, were evaluated; 14 (32.6%) patients were within normal limits (0-7), 16 (37.2%) patients had mild anxiety, 9 (20.9%) patients moderate anxiety, and 4 (9.3%) patients severe anxiety. The mean of the second BAI scores of 43 patients was found to be 10 (1-9). This value indicates mild anxiety (8-15). A statistically significant increase was observed in the mean of the initial and second BAI scores ($p < 0.001$) [Table 2].

Spearman correlation between age and increase in anxiety scores was not found statistically significant ($p=0.253$). Likewise, using the ANOVO test, no significant correlation was found between the type of operation, gender, tampon withdrawal day and the increase in anxiety scores ($p=0.103$), ($P=0.943$) ($P=0.295$) [Table 3].

Table 2: Anxiety Scores.

| | First BAI | Second BAI | P value |
|------------------------|------------|------------|---------|
| Total Becks Score | 5 (1-9) | 10 (6-17) | < 0.001 |
| Anxiety Classification | | | |
| 0-7 Normal | 28 (%65.1) | 14 (%32.6) | 0.003 |
| 8-15 Mild | 11 (%25.6) | 16 (%37.2) | |
| 16-25 Moderate | 4 (%9.3) | 9 (%20.9) | |
| 26-63 Severe | | 4 (%9.3) | |

Table 3: Subgroup analysis for score difference (Initial BAI – Second BAI).

| | | | N | Mean \pm Std. Deviation | P value |
|------------------------|-----------|------------------|----|---------------------------|---------|
| First BAI – Second BAI | Gender | Male | 27 | 6.370 \pm 7.806 | 0.943 |
| | | Female | 16 | 6.188 \pm 8.5473 | |
| | Operation | Septorhinoplasty | 24 | 4.541 \pm 8.256 | 0.103 |
| | | Septoplasty | 19 | 8.526 \pm 7.175 | |
| | Days | 2 | 19 | 5.736 \pm 6.813 | 0.295 |
| | | 3 | 16 | 8.500 \pm 9.906 | |
| | | 7 | 8 | 3.250 \pm 5.311 | |

Discussion

Preoperative anxiety increases the stress response by activating the release of neuroendocrine mediators, thus negatively affecting the surgery, anesthesia and postoperative recovery process. According to Maranets and Kain, patients with anxiety need higher doses of anesthetics during surgery [5]. Reducing stress and anxiety can also reduce the risk of organ damage and complications by reducing the neurohormonal response to surgery [8, 10].

Anxiety creates a stress response that inhibits the healing process. Anxiety is not a desired condition in surgical procedures. In our study, we see that the more comfortable nasal split tampons, which occupy the patients' minds the most and disrupt the comfort, still cause anxiety in the nose operation, and this affects the recovery process and sleep of the patient. In order to prevent this, we are planning more extensive new studies in consultations with psychiatry.

Sarı K. et al compared the effects of transseptal suture and nasal packing on anxiety levels. In their study, transseptal suture was applied to 28 patients (Group 1) and nasal splint packing was applied to 34 patients (Group 2). State-Trait Anxiety Inventory (STAI-S) scores were 35.0 in the transseptal suture group and 43.8 in the nasal packing group, and this difference was statistically significant ($p < 0.05$). In this study, in accordance with our study; it has been shown that nasal packing removal can increase anxiety [11]. But some nose operations need nasal tampon. We can't put transseptal suture every patient.

Şahin C. et al. [12] investigated the effect of nasal packing removal on anxiety in their study on 50 patients who had septoplasty operation. In this study, different from our study, "Merocele" tampons were applied to all patients. In our study, "Doyle open lumen splint" tampons were applied to all patients. While this study was conducted only on septoplasty patients, septorhinoplasty patients were also included in our study. In their study, that "State-Trait Anxiety Inventory" (STAI) was used, the mean preoperative scores were found to be 44.2 ± 7.4 , 45.1 ± 7.1 before tampon withdrawal, and 37.4 ± 6.7 after tampon withdrawal. Contrary to our study, no statistically significant difference was found between the mean preoperative anxiety score and before tampon removal. In our study, a statistically significant increase was observed.

In recent studies, it is said that the drugs given to the patients reduce the tampon pain [13]. But the important thing is to reduce the increasing anxiety of the patients until the tampon removal. Because this stress situation negatively affects the outcome of the surgery and patient comfort. Moreover, merocele was

used in this study, and it is known that it has more pain than the nasal split tampons.

Recently, we cut the upper part of the nasal tampons so that it only sits on the septum and does not push the nasal dorsum up, patients sometimes do not even realize that they are pulled, while removing the tampons, which provides us more comfort.

Conclusion

In this study, although we used nasal split tampons, which we think is comfortable, and we informed the patients, we still see stress in patients, especially after the operation. As stated in the literature, this affects the recovery times of the patients and even increases the postoperative bleeding due to stress. In order to prevent this, it would be more enlightening to conduct studies in larger patient groups together with the psychiatry department.

Declarations section

Ethics approval and consent to participate: Necessary permissions were obtained from the ethics committee of the university and from the patients.

Ethics committee approval: Onsekiz Mart University Medical School Clinical.

Ethics Committee document number 2020-09

Consent for publication: Not applicable.

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Authors' contributions

ÖCC participated in the design, concept, data collection, analysis, literature search, writing manuscript of the paper.

AK participated in the design, histopathologic analysis, literature search, writing manuscript of the paper.

DS participated in the statistical analysis.

All authors read and approved the final manuscript.

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