Do Pharyngeal Surgeries for the Treatment of Snoring and Obstructive Sleep Apnea Have an Impact on Nasalance Scores?

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Abstract

Objective: The aims of several studies that have been conducted are to determine the pharyngeal surgeries which are used in the treatment of habitual snoring and obstructive sleep apnea mainly target velopharyngeal structures, which play an important role in voice characteristics such as nasalance. The aim of this study is to analyze the effects of different pharyngeal surgeries on nasalance in patients with habitual snoring and obstructive sleep apnea.

Methods: The study population included 44 patients (20 male and 24 female) who underwent surgical procedures including expansion pharyngoplasty, lateral pharyngoplasty, and anterior palatal palate on nasalance scores. The surgeries were performed in a single operating room by the same surgeon. The patients were divided into 3 groups according to the type of surgery: Group 1 (EPP, n=10), Group 2 (UPPP, n=15), and Group 3 (LPHP, n=19). The nasalance scores were recorded before and after the surgeries. The Wilcoxon signed-rank test was used to compare the nasalance scores before and after the surgeries. A p-value < 0.05 was considered significant.

Results: The nasalance scores decreased significantly in all 3 groups after the surgeries (p<0.05). The greatest decrease in nasalance scores was observed in Group 3 (LPHP), followed by Group 2 (UPPP) and Group 1 (EPP). The mean difference in nasalance scores before and after the surgeries was -0.12 ± 0.21 in Group 1, -0.09 ± 0.20 in Group 2, and -0.15 ± 0.23 in Group 3, respectively. The nasalance scores of Group 3 were significantly lower than those of Groups 1 and 2 after the surgeries.

Discussion: The results of this study suggest that lateral pharyngoplasty and expansion pharyngoplasty are more effective in reducing nasalance scores than traditional palatopharyngeal surgeries. Additionally, the nasalance scores decreased significantly in all groups after the surgeries, indicating that the surgeries had a positive effect on voice quality.

Conclusion: The results of this study suggest that lateral pharyngoplasty and expansion pharyngoplasty are more effective in reducing nasalance scores than traditional palatopharyngeal surgeries. Additionally, the surgeries had a positive effect on voice quality.

Keywords: Snoring, sleep apnea, pharyngeal surgery, expansion pharyngoplasty, lateral pharyngoplasty, anterior palatal palate.