Winter 9-1-2020

Effect of surgical and medical interventions in patients with deviated nasal septum and allergic rhinitis on pulmonary function

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Purpose: Several studies done previously have described the positive impact of surgical correction of nasal obstruction on pulmonary function. However, the effect of medications given routinely during the post-operative period has not been considered. In this study, we aim to separately understand the effect of both medical as well as surgical management on pulmonary function in patients suffering from a deviated nasal septum and concurrent allergic rhinitis.
Methods: A total of 16 patients with septal deviation and concurrent allergic rhinitis were included in the study. Demographic data, clinical and physical examination including anterior rhinoscopy and diagnostic nasal endoscopy was performed. Pulmonary function testing (PFT) was done separately before the start of medical management and before the surgery. Post-operatively, PFT was repeated at the end of 1 month and 2 months with different treatment regimens during each period. SPSS V. 17 was used to analyse the data. For quantitative data analysis Student Paired 'T' test has been used and P value <0.05 was considered statistically significant.
Results: Most of the PFT parameters showed an improvement after medical management, with statistically significant changes noted in the FEV1 and PEF values (P values- 0.016 and 0.005, respectively). Following surgery, at the end of 1 month, we observed a decline in the PFT values with a significant decrease noted in the FEF25-75% value (P value- 0.015). Repeat PFTs done at the end of 2 months after a month-long course of intranasal corticosteroids showed a non-significant improvement in the values.
Conclusion: A favourable outcome was noted in the PFT values in patients with nasal obstruction with medical management and a slight decline with surgical management. The decrease in PFT values following surgery could be attributed to post-operative oedema, inflammation, and collection in the nasal cavity. At the end of both medical and surgical treatment, the PFT values showed a numerical trend towards improvement in pulmonary function.