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THE IMPACTS OF SEPTOPLASTY ON SLEEP QUALITY: A LITERATURE REVIEW

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Érica da Silva de Oliveira, João Vítor Ferraz Gomes, Eduarda Cristina Antoniazzi, Roberta Melo Toccafondo and Michelle Paz de Araújo

ABSTRACT

Septoplasty, a surgical procedure indicated for the correction of a deviated nasal septum, is widely recognized for improving respiratory function, but its psychological impact, particularly in relation to sleep quality, remains underexplored. This study aims to analyze the relationship between deviated septum correction and aspects related to sleep quality and psychological well-being. A systematic review of the literature was carried out based on articles published between 2004 and 2024, extracted from the SciELO and PubMed databases, focusing on sleep disorders, emotional impact, and quality of life. The results suggest that septoplasty has the potential to promote significant improvements in sleep, reduce symptoms of anxiety and depression and, consequently, improve the quality of life of patients. However, the magnitude of these effects is subject to individual variations and the severity of preoperative symptoms.

Keywords: Septoplasty. Sleep Quality. Literature Review.

INTRODUCTION

Nasal septum deviation is one of the most prevalent conditions in the general population, characterized by asymmetry of the nasal septum, which can result in upper airway obstruction. When left uncorrected, this condition is associated with a number of respiratory complications, such as snoring, obstructive sleep apnea (OSA), and chronic sinusitis. In addition to the impact on respiratory functions, deviated septum is closely related to the deterioration of sleep quality, with repercussions on the psychological well-being of patients, such as increased symptoms of anxiety and depression (Müller & Guimarães, 2007).

Septoplasty is the surgical treatment of choice for the correction of deviated septum, being effective in restoring nasal patency and improving respiratory function. However, the impact of this surgery on the sleep and psychological state of patients still needs an in-depth analysis. Sleep disorders, such as insomnia and OSA, have been shown to be directly correlated with various psychological problems, substantially affecting quality of life (Popoaski et al., 2012). Therefore, it is essential to understand not only the respiratory benefits of septoplasty, but also the subsequent psychosocial effects, in particular, the impacts on sleep quality and emotional state.

This study will review the available literature on the effects of septoplasty on sleep and psychological well-being, with an emphasis on the mechanisms that explain the interaction between deviated septum correction, respiratory improvement, and psychological consequences.

METHODOLOGY

A literature review was conducted based on articles indexed in the SciELO and PubMed databases, published between 2004 and 2024, in Portuguese, Spanish, and English. The search strategy used the descriptors "Insomnia", "Deviated Septum" and "Surgery" to identify relevant studies. Intervention articles, randomized clinical trials, observational studies, dissertations, and theses that directly or indirectly addressed the effects of septoplasty on sleep quality, respiratory function, and the psychological impact of patients were included. The analysis excluded studies that were not directly related to the proposed objectives or that presented insufficient data on postoperative outcomes.

RESULTS

A deviated nasal septum is often associated with sleep-affecting respiratory complications, such as snoring and obstructive sleep apnea. Studies show that septoplasty

provides significant improvements in nasal breathing and, consequently, in the quality of sleep in patients. According to Popoaski et al. (2012), patients with chronic mouth breathing, often diagnosed with sleep-disordered breathing, showed a substantial increase in quality of life and sleep quality after correction of the deviated septum.

In addition, several studies indicate that correction of a deviated septum not only improves respiratory function, but also has a positive impact on the psychological well-being of patients, with a significant reduction in symptoms of anxiety and depression. Daltro et al. (2006) point out that sleep disorders, such as OSA, are strongly associated with psychiatric comorbidities, especially in individuals with obesity, and that the correction of respiratory problems through septoplasty can attenuate these comorbidities, leading to an improvement in the emotional state of patients.

A study by Ephrath et al. (2020) also revealed that interventions for nasal obstructions, such as septoplasty, are related to a significant improvement in quality of life, with a decrease in complaints associated with sleep and a reduction in psychological symptoms. Reduced sleep deprivation has been consistently associated with a decreased prevalence of depressive and anxious symptoms, evidence that supports the hypothesis that improvement in respiratory function can positively influence the psychological state of patients.

DISCUSSION

The quality of life of individuals with sleep disorders is profoundly affected by the interruption of the healthy rest cycle, directly impacting their physical and emotional health. According to the World Health Organization (WHO), quality of life involves not only physical aspects, but also social, psychological, and environmental factors, and any change in one of these domains can compromise the general well-being of the individual. One of the physical factors directly related to quality of life and sleep is mouth breathing, which occurs when nasal breathing is insufficient or blocked for a period of more than six months, leading to a dependence on mouth breathing, with several implications for the patient's health (Müller & Guimarães, 2007; Popoaski et al., 2012).

Mouth breathing can be triggered by a number of conditions, including hypertrophy of the adenoids and tonsils, deformities in nasal structures, allergic rhinitis, and even foreign bodies in the upper respiratory tract. Nasal septum deviation (DSN), both congenital and acquired, is one of the most common causes of this altered breathing pattern. The prevalence of respiratory disorders associated with DSN can vary with age, with a more significant impact on respiratory functions in adults and children (Daltro et al.,

2006). DSN, by hindering airflow through the nose, can impair air heating and humidification, affecting efficient gas exchange and contributing to complications such as sinusitis, snoring, and obstructive sleep apnea (OSA) (Alghamdi et al., 2022).

The presence of a nasal deviation can be asymptomatic in many cases, but it can also generate significant symptoms, such as breathing difficulties during sleep, which is often associated with obstructive apnea. DSN, in conjunction with other conditions such as adenotonsillar hypertrophy, can result in airway obstruction, affecting respiratory health and sleep quality. Obstructive sleep apnea, a disorder characterized by breathing pauses during sleep, can lead to hypoxemia (low concentration of oxygen in the blood) and hypercapnia (increased carbon dioxide levels), which in turn activates the sympathetic nervous system and increases the burden on the cardiovascular system (Ephrath et al., 2020).

Studies show that adenoid and tonsil hypertrophy is particularly relevant in children, where its presence can impair cognitive and physical development. In adults, this condition is often underestimated, but it can also lead to obstructions in the nasal passages and aggravate breathing disorders during sleep. Mouth breathing associated with these conditions can result in serious impacts on sleep quality and, consequently, on the patient's quality of life, compromising their daily activities and social relationships (Leites, 2024).

In terms of treatment, deviated nasal septum can be addressed in a surgical or non-surgical manner, with the choice of method depending on the severity of the symptoms and the patient's complaints. The use of steroid nasal sprays is commonly recommended in the management of allergic rhinitis, while septoplasty, a surgical procedure to correct nasal deviation, has been shown to be more effective for cases of severe obstruction, resulting in a significant improvement in sleep quality and respiratory function (Marcelino et al., 2014). The satisfaction rate with septoplasty can range from 50% to 100%, with most patients reporting a considerable improvement in their quality of life after the procedure (Costa, 2020).

Another important aspect is the relationship between obstructive sleep apnea (OSAS) and nasal breathing disorders, such as DSN. OSAS is characterized by repeated episodes of upper airway collapse, which reduces ventilation during sleep and results in several health problems, such as hypertension, diabetes, lung disease, and even stroke. The diagnosis of OSAS is usually made by means of polysomnography, although its high cost and difficulty of access to the test limit its use in many cases (Daltro et al., 2006).

Patients with a high apnea/hypopnea index may have a number of comorbidities, and the treatment of OSAS is essential to prevent serious complications.

The presence of snoring and mouth breathers is often associated with a higher incidence of OSAS. Studies indicate that mouth breathers tend to present more significant changes in the apnea/hypopnea index than individuals who breathe predominantly through the nose (Burguer et al., 2004). In children, the clinical manifestations of sleep-disordered breathing are distinct, with obstructions in the upper airways occurring more continuously and therefore resulting in more severe symptoms compared to adults (Izu et al., 2010).

Correction of the nasal septum deviation can be an effective solution to reduce the incidence of OSAS, especially in patients with a higher body mass index (BMI), who tend to have an overload on the airways. Treatment should always be multidisciplinary, involving a detailed evaluation of the medical history and associated conditions, such as rhinosinusitis, chronic bronchitis, and otitis media. Clinical examinations, such as rhinoscopy and nasal endoscopy, are essential to determine the degree of septal deviation and the impact on the airways (Leites, 2024).

Regarding the overall impact on quality of life, the correction of nasal obstruction has shown remarkable benefits. Patients who undergo procedures to resolve nasal obstruction report a substantial improvement in sleep, with reduced nocturnal awakenings and difficulty falling asleep. In addition, they observe an improvement in cognitive and emotional performance, reflecting in greater productivity and concentration, and less sense of frustration in everyday life (Moshe et al., 2021). Thus, it is evident that the appropriate approach to respiratory problems, such as nasal septum deviation and obstructive sleep apnea, can have a significant impact on the overall quality of life, reflecting an improvement in the physical, emotional, and social well-being of patients.

CONCLUSION

Septoplasty, by correcting the deviated nasal septum, not only promotes an improvement in respiratory function, but also has significant effects on the quality of sleep and psychological well-being of patients. Correcting breathing disorders, such as obstructive sleep apnea, results in a substantial reduction in symptoms of anxiety and depression, as well as contributing to an increase in overall quality of life. These findings reinforce the importance of considering psychosocial aspects in the evaluation and treatment of patients with deviated septum, suggesting that septoplasty should be part of a holistic treatment plan that includes psychological follow-up, particularly in individuals with preexisting emotional disorders. In summary, septoplasty presents itself as an effective

intervention not only for improving respiratory function, but also for improving sleep quality and psychological well-being of patients.

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