JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS

VOLUME 04, ISSUE 10
MOPNTHLY JOURNALS

ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

HOW DOES ADENOIDECTOMY AFFECT IMMUNITY

Hamidov Bahodir Obidjon ugli

Faculty of Medicine, International University of Asia, Uzbekistan.

Abstract. The authors analyzed the published data on the impact of adenoidectomy on a child's immune system. Numerous articles in international literature express caution regarding adenoidectomy. However, none of them provide evidence that removal of the adenoids leads to a significant decline in immunity. Considering contradictory scientific opinions, several research groups attempted to objectively assess the effect of adenoidectomy on the immune system. These studies showed optimistic results: when performed based on proper indications, adenoidectomy does not negatively affect immune defense mechanisms and improves children's quality of life, physical and mental development, as well as middle ear ventilation.

Keywords: adenoidectomy, immune response, pharyngeal tonsil, IgG, IgA, IgM.

Over the past decades, the strategy of surgical treatment of adenoids has increasingly been questioned. These concerns are based on the important immunological role of the pharyngeal tonsil, as well as the notion of low efficacy and possible complications of the surgery. In our country, the scientific debate has become especially active, and the recommendations for managing children with adenoids are often so contradictory that making correct clinical decisions becomes difficult for practicing physicians .

The negative impact of adenoid hypertrophy on the growing child's body and the necessity of timely treatment have long become axiomatic in otorhinolaryngology and pediatrics. Nevertheless, the main treatment method remains adenoidectomy — one of the most common surgical procedures not only in otorhinolaryngology but in medicine in general .The idea of low effectiveness of conservative treatment of adenoids was proposed as early as the beginning of the 20th century, and in subsequent decades, specialists focused on improving surgical techniques to increase efficacy and safety .

A careful review of the existing literature on the potential benefits and harms of surgical treatment of adenoids became necessary, and this article presents such an analysis. We reviewed publications studying the impact of adenoidectomy on the immune system and evaluated the influence of various surgical methods on primary clinical symptoms.

Debates between supporters and opponents of adenoidectomy intensified in the early 21st century after several influential works by the renowned Danish researcher P. Brandtzaeg. He emphasized the immunological significance of the pharyngeal tonsil and recommended a cautious approach to adenoidectomy, especially in young children . Earlier studies had identified plasma and histiocytic cells in the pharyngeal tonsil; during inflammation, histiocytes transform into active phagocytes. The activity of these cells is critical for the antigen-specific reactions of mucosal and systemic immunity. Together with T- and B-lymphocytes, dendritic cells, and absorptive crypt epithelium, the lymphoid tissue of the pharyngeal tonsil represents one of the key initiation points for mucosal immune responses . Additionally, cellular defense elements found on the mucosal surface help regulate the nasopharyngeal microflora .

However, none of these studies questioned the justification of adenoidectomy. Even Brandtzaeg, who highlighted the uniqueness of Waldeyer's lymphatic ring and the special role of the adenoids, never concluded that their removal leads to persistent immune dysfunction. He recommended only cautious decision-making for young children .

Brandtzaeg's ideas were actively supported by researchers studying the efficacy of conservative treatments — particularly intranasal corticosteroids. Recently, several papers have shown the effectiveness of these medications in reducing adenoid size and clinical symptoms .However, none of these studies presented reliable evidence of harm from adenoidectomy. Most authors merely speculated on the immunological role of adenoids without demonstrating postoperative complications. For example, Berluzzi . indirectly mentions possible adverse effects of the surgery but refers to the work of C. Paulussen, who reached the opposite conclusion: "Tonsillectomy and adenoidectomy may cause clinically insignificant changes in cellular and humoral immunity, but an increase in morbidity after surgery should not be expected.".

In our country, the idea of preserving adenoids at any cost gained popularity largely due to reports of low surgical efficacy in earlier decades. Several authors described incomplete removal and high recurrence rates . However, these outcomes were mainly associated with blind, non-visualized surgical techniques. After the introduction of endoscopic methods, surgical success rates became comparable to those reported in foreign literature. Considering the contradictory scientific opinions, several groups conducted studies to assess the effect of adenoidectomy on the immune system. The works of B. Zielnik-Jurkiewicz, D. Jurkiewicz, and S. Yang are particularly noteworthy . Polish researchers compared IgA, IgG, IgM levels, CD3, CD4, CD8 lymphocyte counts, and CMI test results in children with and without adenoidectomy. Immune parameters in children with adenoids were already altered preoperatively; after surgery, a short-term decrease was observed, followed by complete normalization within six months.

Chinese researchers reported even more favorable results: postoperative levels of IgG, IgA, IgM, CD3, CD4, and CD8 did not decrease, indicating that adenoidectomy does not impair immune function. P.S. Mattila demonstrated that the surgery does not worsen allergy symptoms; instead, it improves the clinical course of bronchial asthma .

Thus, the scientific literature contains no reliable evidence proving that adenoidectomy causes harmful immunological effects. The arguments of opponents are often based on theoretical assumptions.

By contrast, numerous international studies consistently demonstrate the clinical efficacy of adenoidectomy. For instance, I. Elsherif and C. Kareemullah reported a reduction of most clinical symptoms after surgery .A.V. Chuma and colleagues observed improvement of voice function within 15 weeks postoperatively .In a study by J.R. Mozata-Nunez involving 180 children with obstructive sleep apnea, symptoms nearly vanished within seven months . These results have been confirmed by many other authors .

Adenoidectomy has also been shown to decrease the need for reoperation in cases of secretory otitis, improve the condition of children with cardiovascular disorders ,and provide stable remission in patients with allergic rhinosinusitis and asthma . Postoperative improvement in neurological parameters, EEG results, and sleep quality has been reported . It also has a positive effect on growth and weight gain , and reduces the frequency of upper respiratory infections .

Endoscopically guided coagulation adenoidectomy, as described by F.J. Buchinsky, M.A. Lowry and G. Isaacson, demonstrated no recurrence of nasal obstruction in a cohort of 175 children . Over the past 20 years, the PubMed database has listed 101 studies confirming the high effectiveness of adenoidectomy, and **not a single paper** demonstrating significant negative outcomes.

Conclusion

In conclusion, adenoidectomy performed based on clear clinical indications does not negatively affect the immune system and significantly improves children's quality of life, physical and mental development, and middle ear ventilation. Concerns regarding harmful effects of adenoidectomy are unsubstantiated. However, due to potential surgical and postoperative complications, adenoidectomy should be performed only after conservative treatment options have been exhausted and strictly according to indications.