

*Osmangazi Journal of Medicine**e-ISSN: 2587-1579***Frequency of Rhinoplasty Requests During Adolescence: A Single-Center Retrospective Analysis**

Adölesan Dönemde Rinoplasti Başvurularının Sıklığı: Tek Merkezli Retrospektif Bir Analiz

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Ethics Committee Approval: The study was approved by Bitlis Eren University Noninterventional Clinical Research Ethical Committee (Decision no: 1, Date: 01.10.2025)**Research and Publication Ethics Statement:** This study was conducted in accordance with research and publication ethics.**Informed Consent:** The authors declared that it was not considered necessary to get consent from the patients because the study was a retrospective data analysis.**Authorship Contribution:** SE: Conceptualization, methodology, investigation, data curation, formal analysis, interpretation of results, writing—original draft, writing—review and editing, and final approval of the manuscript. AL: Literature review, data organization, writing—review and editing, and final approval of the manuscript.**Copyright Transfer Form:** Copyright Transfer Form was signed by all authors.**Peer-review:** Internally peer-reviewed.**Conflict of Interest:** The authors declare that there is no conflict of interest.**Financial Disclosure:** The authors declared that this study received no financial support.

Abstract: Globally, many nasal surgeries are performed to address both aesthetic and functional concerns rather than purely functional issues. In recent years, increasing aesthetic awareness among adolescents has led to a growing number of visits to plastic surgery clinics for rhinoplasty requests. This study aimed to retrospectively evaluate rhinoplasty requests in a state hospital setting, with particular attention to adolescent applicants and the functional nasal findings associated with surgical decision-making in this age group. During the 18-month study period, 867 patients presented to the Plastic, Reconstructive, and Aesthetic Surgery Clinic with a request for rhinoplasty. Patients were categorized as adolescents (≤ 19 years) and adults (≥ 20 years). Demographic data, surgical status, and functional nasal findings, including significant axis deviation, septal deviation, breathing difficulty, and concha hypertrophy, were analyzed. Rhinoplasty was performed in 88 patients, including 82 adults and 6 adolescents. Among adolescents who underwent surgery, functional nasal findings were prominent, most commonly septal deviation accompanied by breathing difficulty and significant axis deviation. Exploratory comparisons showed that these findings were more frequent in adolescents than in adults, whereas concha hypertrophy did not differ significantly between groups. However, because of the small number of adolescents who underwent surgery, these comparative findings should be interpreted cautiously. Although the surgical rate among adolescent applicants was low, functional problems were prominent among those selected for surgery and frequently accompanied aesthetic concerns. These findings suggest that adolescent rhinoplasty requests should be evaluated through a multidimensional approach considering both functional and aesthetic factors.

Keywords: adolescent, esthetics, nasal septum, rhinoplasty,

Özet: Küresel olarak birçok nazal cerrahi, yalnızca fonksiyonel sorunları değil, hem estetik hem de fonksiyonel kaygıları gidermek amacıyla yapılmaktadır. Son yıllarda adölesanlarda artan estetik farkındalık, rinoplasti talepleriyle plastik cerrahi kliniklerine başvuruların artmasına yol açmıştır. Bu çalışmada, bir devlet hastanesi ortamında rinoplasti taleplerinin, özellikle adölesan başvurular ve bu yaş grubunda cerrahi karar verme süreciyle ilişkili fonksiyonel bulgular açısından retrospektif olarak değerlendirilmesi amaçlandı. On sekiz aylık çalışma döneminde, 867 hasta Plastik, Rekonstrüktif ve Estetik Cerrahi Kliniği'ne rinoplasti talebiyle başvurdu. Hastalar yaşa göre adölesanlar (≤ 19 yaş) ve erişkinler (≥ 20 yaş) olarak sınıflandırıldı. Demografik veriler, cerrahi durumu ve belirgin aks deviasyonu, septal deviasyon, solunum güçlüğü ve konka hipertrofisini içeren fonksiyonel nazal bulgular analiz edildi. Rinoplasti 88 hastaya uygulandı; bunların 82'si erişkin, 6'sı adölesandı. Cerrahi uygulanan adölesanlarda fonksiyonel nazal bulgular belirgindi; en sık solunum güçlüğünün eşlik ettiği septal deviasyon ve belirgin aks deviasyonu izlendi. Keşifsel karşılaştırmalarda bu bulguların adölesanlarda erişkinlere göre daha sık olduğu, konka hipertrofisi açısından ise gruplar arasında anlamlı fark olmadığı görüldü. Ancak cerrahi uygulanan adölesan sayısının az olması nedeniyle bu karşılaştırmalı bulgular dikkatli yorumlanmalıdır. Adölesan başvurularda cerrahi oran düşük olmakla birlikte, cerrahiye seçilen hastalarda fonksiyonel sorunlar belirgindi ve sıklıkla estetik kaygılara eşlik etmekteydi. Bu bulgular, adölesan rinoplasti taleplerinin fonksiyonel ve estetik faktörleri birlikte ele alan çok boyutlu bir yaklaşımla değerlendirilmesi gerektiğini göstermektedir.

Anahtar Kelimeler: adölesan, estetik, nazal septum, rinoplasti

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1. Introduction

Rhinoplasty is one of the most complex procedures in plastic surgery, aiming to restore both nasal function and facial harmony. Globally, a considerable proportion of nasal surgeries are performed for combined aesthetic and functional concerns rather than purely functional reasons. Parallel to the increasing societal emphasis on physical appearance, rhinoplasty has become increasingly popular among adolescents. According to the 2016 Cosmetic Surgery National Data Bank Statistics, 39,709 cosmetic surgical procedures were performed in individuals aged 18 years and younger (1,2).

The World Health Organization defines adolescence as the period between 10 and 19 years of age, during which craniofacial growth continues (3). Unlike in adults, surgical modification of nasal cartilage at this stage may affect nasal development if not carefully planned (4). However, functional deformities such as severe septal deviation, turbinate hypertrophy, or chronic nasal obstruction may also adversely affect nasal and midfacial growth if left untreated (5,6). In addition, the rate of secondary rhinoplasty operations has been reported to be higher among adolescents than among adults (7).

In Turkey, data on the proportion of adolescents presenting to plastic surgery clinics with rhinoplasty requests remain limited. The present study retrospectively analyzed patients presenting with rhinoplasty requests at a state hospital, with particular emphasis on the frequency of adolescent applicants and the functional nasal findings that influenced surgical decision-making in this age group.

2. Materials and Methods

This retrospective study included patients who presented to the Plastic, Reconstructive, and Aesthetic Surgery Clinic of a state hospital requesting rhinoplasty between 1 August 2023 and 30 January 2025. Ethical approval for the study was obtained from the Bitlis Eren University Non-Interventional Clinical Research Ethics Committee (protocol no: 2025/8, decision no: 1, date: October 1, 2025). The study was conducted in accordance with

the principles of the Declaration of Helsinki. As this was a retrospective study, requirement for informed consent was waived.

Patient data were anonymized prior to analysis. Data extracted from medical records included patient age, sex, presence of breathing difficulty, significant axis deviation, septal deviation, concha hypertrophy, and whether surgery was performed. Patients were categorized into two groups: adolescents (≤ 19 years) and adults (≥ 20 years).

Breathing difficulty was recorded based on the patient's documented preoperative complaint of nasal obstruction. Significant axis deviation was defined as an externally visible deviation of the nasal axis from the facial midline on frontal examination and standard preoperative photographs when clinically apparent and relevant to surgical planning. Septal deviation and concha hypertrophy were assessed through preoperative physical examination, including anterior rhinoscopy using a nasal speculum, and paranasal sinus computed tomography findings.

Categorical variables were summarized as frequencies and percentages. Statistical analyses were performed using R software (R Foundation for Statistical Computing, Vienna, Austria). Owing to the small sample size in the adolescent group, comparisons between groups were performed using Fisher's exact test. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to estimate the strength of associations. A p-value < 0.05 was considered statistically significant.

3. Results

During the 18-month study period, 867 patients presented to our clinic requesting rhinoplasty. Of these, 135 patients (15.6%) were aged 19 years or younger. Rhinoplasty was performed in 88 patients, including 82 adults (93.2%) and 6 adolescents (6.8%). Of these 6 patients, 2 were 18 years old, 4 were 19 years old, and 3 were male (50%). Detailed demographic characteristics are presented in Figure 1.

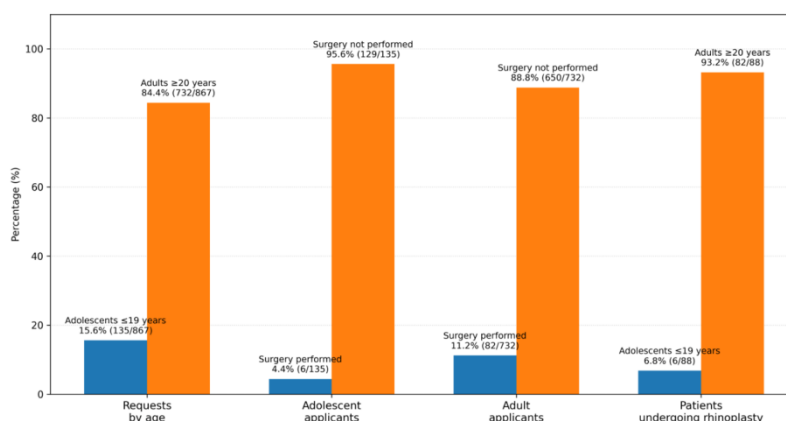


Figure 1. Distribution of rhinoplasty applicants and surgical rates according to age group.

In the adult group, 7 patients (8.5%) had significant axis deviation, 15 (18.3%) had septal deviation accompanied by breathing difficulty, and 40 (48.8%) had concha hypertrophy. In the adolescent group (6.82%), 4 patients (66.7%) had significant axis deviation, 5 (83.33%) had septal deviation accompanied by breathing difficulty, and 3 (50%) had concha hypertrophy. Comparative statistical analyses, including odds ratios, 95%

confidence intervals, and p-values, are presented in Table 1. Septal deviation with breathing difficulty and significant axis deviation were significantly more frequent in adolescents, whereas no significant difference was observed for concha hypertrophy.

Representative adolescent patients who underwent rhinoplasty are shown in Figures 2–4.

Table 1. Comparison of functional nasal findings between adolescents and adults who underwent rhinoplasty. P-values were calculated using Fisher's exact test.

Variable	Adolescents (≤19 years, n=6)	Adults (≥20 years, n=82)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Septal deviation with breathing difficulty	5 (83.3%)	15 (18.3%)	21.26	2.16–1064.16	0.002*
Significant axis deviation	4 (66.7%)	7 (8.5%)	19.88	2.39–255.85	0.0018*
Concha hypertrophy	3 (50.0%)	40 (48.8%)	1.05	0.13–8.30	1.00

*Statistically significant.



Figure 2. Preoperative (left) and postoperative (right) frontal and basal views of an adolescent patient with significant right-sided nasal axis deviation. Postoperative images were obtained at 6 months.



Figure 3. Preoperative (left) and postoperative (right) frontal, basal and lateral views of an adolescent patient with significant right-sided nasal axis deviation. Postoperative images were obtained at 12 months.



Figure 4. Preoperative (left) and postoperative (right) frontal, basal and lateral views of an adolescent patient with significant right-sided nasal axis deviation. Postoperative images were obtained at 18 months.

4. Discussion

Rhinoplasty requests among adolescents have become increasingly relevant in plastic surgery practice, reflecting both aesthetic concerns and functional nasal complaints (1,2,4). In this age group, surgical decision-making is particularly challenging because ongoing craniofacial growth, nasal airway function, facial harmony, and psychosocial development must all be considered simultaneously (4,8,9). Therefore, adolescent rhinoplasty should not be evaluated solely as an aesthetic procedure, but rather through a multidimensional assessment of functional impairment, facial deformity, maturity, and patient expectations.

Anatomically, adolescents differ from adults by having a higher cartilage-to-bone ratio in the nasal framework, a wider nasolabial angle, and lower

projection of the nasal dorsum and tip (4,10). Nasal growth and maturation continue throughout adolescence, with most girls and boys reaching nasal maturity at approximately 16 and 17 years of age, respectively (11). These anatomical and developmental characteristics are important because the nasal septum acts as a key growth center for the nose and midface (6). Excessive resection, destabilization, or disruption of septal support during this period may theoretically interfere with nasal growth and contribute to long-term changes such as altered dorsal projection, loss of tip support, persistent or recurrent axis deviation, midfacial retrusion, or changes in nasal proportions. Therefore, adolescent rhinoplasty should be planned conservatively, with preservation of growth-supporting structures whenever possible (4,6,11,12).

However, avoiding surgery in all adolescents may also be problematic. Untreated functional abnormalities such as severe septal deviation, turbinate hypertrophy, chronic nasal obstruction, and marked external nasal axis deviation may negatively affect nasal airflow and, in some patients, may contribute to abnormal breathing patterns and unfavorable craniofacial development (5,6,13). Persistent nasal obstruction may also impair quality of life, sleep quality, exercise tolerance, and social functioning (5,12). Therefore, the decision to operate should balance the potential risk of disturbing ongoing growth against the possible consequences of leaving significant functional pathology untreated (4,8,12,13).

In the present study, adolescents accounted for 15.6% of rhinoplasty requests, but only 4.4% of adolescent applicants ultimately underwent surgery. This finding suggests that adolescent applicants were approached selectively and that surgery was not performed merely on the basis of aesthetic demand. Instead, surgery was generally reserved for adolescents with prominent functional findings.

This selective approach is important when considered in relation to previous literature. Chauhan et al. reported improved quality of life after adolescent rhinoplasty, but only after careful preoperative assessment, including growth stability, psychological readiness, parental support, and realistic expectations (9). Kalantar-Hormozi et al., on the other hand, presented a more flexible perspective, reporting favorable outcomes after adolescent rhinoplasty performed mainly for aesthetic indications, while also emphasizing the potential psychosocial benefits of correcting nasal deformity during adolescence (14). However, Shah et al., in a large United States cohort, reported that 24,322 patients who underwent septoplasty or rhinoplasty were aged 18 years or younger, and that adolescent patients had higher revision septoplasty rates than adults. The principal implication of that study was not that adolescent nasal surgery should be avoided; rather, younger patients may require more comprehensive preoperative counseling and long-term follow-up because of the increased likelihood of revision surgery (7).

In light of these findings, our results further support the importance of evaluating adolescent rhinoplasty requests from both functional and psychosocial perspectives. In our cohort, the small subgroup of adolescents who underwent surgery frequently had significant axis deviation and septal deviation accompanied by breathing difficulty. Septal

deviation associated with breathing difficulty represents a functional problem that may contribute to nasal obstruction, impaired quality of life, and potential effects on nasal and midfacial development. Similarly, externally visible nasal axis deviation may not only reflect structural deformity but may also have psychosocial significance during adolescence, a period in which facial appearance, self-image, and social confidence are particularly vulnerable. Therefore, our findings suggest that breathing difficulty, septal deviation, and externally evident axis deviation should be carefully assessed when considering rhinoplasty in adolescents (1,9).

Recent literature suggests that, when appropriately indicated, rhinoplasty in adolescents can be performed safely without adversely affecting facial growth. Moreover, correction of functional nasal obstruction may improve airway function and potentially support normal craniofacial development. Nevertheless, purely aesthetic requests should be approached cautiously, and surgical timing should be individualized. Although an increasing number of studies have demonstrated the safety of rhinoplasty in adolescents, patients and their families should be informed about potential complications, the possibility of secondary rhinoplasty, and potential effects on craniofacial growth. Additionally, psychological counseling should be considered for patients whose concerns are predominantly aesthetic (12,15–18). Such an approach favors individualized decision-making rather than routine early intervention or universal postponement of surgery.

This study has several limitations. First, the number of adolescents who underwent rhinoplasty was small, resulting in a marked imbalance between the adolescent and adult surgical groups. Therefore, comparisons between groups should be interpreted cautiously and regarded as exploratory rather than definitive. Second, the retrospective single-center design may limit the generalizability of the findings. Nevertheless, this study provides preliminary data regarding rhinoplasty requests among adolescents presenting to a state hospital and highlights the importance of functional nasal assessment when evaluating surgical candidacy in this age group.

5. Conclusion

Adolescent rhinoplasty requires careful, multidimensional evaluation. For patients presenting with purely cosmetic concerns, postponement until completion of nasal growth remains advisable. However, in selected adolescents with significant functional abnormalities, timely surgical

intervention may be safe and beneficial when appropriately indicated. Larger prospective studies are needed to better define surgical indications,

optimal timing, and long-term outcomes in this population.

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