

## Peer Review File

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### **Reviewer A**

Well-written, concise, and interesting paper with clinically relevant results. I am impressed with the quality of the paper, and I believe it is suitable for publication as is. Congratulations on a job well-done, in my opinion.

### **Reviewer B**

#### Comment 1:

Line 87, and lines 104-106, presumably, the age demarcation was decided upon as related to puberty transition. Curious why there was not further stratification in younger ages? Currently, there are very limited data to support septoplasty under age 5 years. Presumably, indications in that age range are severe to profound derangements. Additionally, facial development is still only 50-60% around age 5-6. It is my opinion, patients under age 5 are best considered separately from patients >5 years given these differences. Anthropology 3D imaging studies suggest similar growth rates between boys and girls at ages 7-10 years, and then divergence, with girls increasing 11-12 years and boys 11-13 years. I appreciate that multiple pre-puberty age groups is challenging and requires additional statistical evaluation. However, the data are less useful when pooling all ages under 14 together given the variety in anatomy and growth. Surgical treatment and risk is likely to vary in these ages, for example there are likely differences between a 1 year old, a 5 year old, and a 10 year old.

#### Reply 1:

We thank the reviewer for their comment and agree that further stratification would be helpful to address the variation in anatomy and surgical outcomes in patients younger than 14 years old. However, this data is unavailable to us at this stage in the research. We have included mention of this consideration in the discussion section and hope that this article will encourage further research into this area.

#### Changes in the text:

Line 216-221: While the age demarcation in this study was chosen based on the pubertal transition, significant variation in anatomy and growth may be seen between patients within the *younger* group. To address these differences, further research may seek to include further stratification by age. Additional research may aim to include a multivariate analysis of long-term surgical and quality of life outcomes stratified by type of septoplasty, surgical indication, or severity of septal deviation.

Comment 2:

Line 92, please clarify that only septoplasty surgery was performed, this study excluded adjunctive nasal surgery, such as valve repair, rhinoplasty, and/or inferior turbinate reduction

Reply 2:

We thank the reviewer for this suggestion and have updated the manuscript to clarify this point.

Changes in the text:

Line 108-110: A retrospective chart review was performed, examining medical records for all patients who received nasal septoplasty without adjunctive surgery at Nationwide Children's Hospital in Columbus, Ohio between October 2009 and September 2016.

Line 114-115: Patients undergoing adjunctive procedures, including valve repair, rhinoplasty, and/or inferior turbinate reduction were excluded from the study.

Comment 3:

Line 94, were there any exclusion criteria? Patients with diagnosis of cleft? Or other craniofacial syndrome?

Reply 3:

We thank the reviewer for this suggestion and have updated the manuscript to clarify this point.

Changes in the text:

Line 114-115: Patients undergoing adjunctive procedures, including valve repair, rhinoplasty, and/or inferior turbinate reduction were excluded from the study.

Comment 4:

Line 115, was the younger cohort followed through puberty to monitor nasal growth? What is the practice's standard protocol for post op follow up after pediatric septoplasty?

Reply 4:

We thank the reviewer for their questions. The younger cohort was followed through puberty to monitor appropriate nasal growth. Patients were typically followed annually after their initial post-operative visit.

Changes in the text:

Line 141-143: As expected, mean follow-up was significantly longer in the younger cohort compared to the older cohort as these younger patients were followed through puberty to monitor appropriate nasal growth

Comment 5:

Lines 128-131, regarding complications, as CRS was a listed indication, what was the post op infection rate? (infections requiring antibiotics)

Reply 5:

We thank the reviewer for this comment and agree that further infection data may be useful, however this data is unavailable to us at this stage.

Changes in the text:

N/A

Comment 6:

Line 163, regarding post op epistaxis, was any turbinate surgery performed? Does this include spotting of blood or limited bloody mucus drainage? What is the post op timeline for epistaxis reported? (Beyond 1-3 days?)

Reply 6:

We thank the reviewer for their questions regarding post-op epistaxis. Patients undergoing turbinate repair were excluded from this study. Epistaxis was defined as bleeding exceeding the expected post-operative spotting of blood at any time during the follow up period. Patients were followed for a mean of 629 days (~21 months) after surgery with a range of 4 to 3,101 days, thus the timeline for post-op epistaxis was always greater than 1-3 days.

Changes in the text:

Line 114-115: Patients undergoing adjunctive procedures, including valve repair, rhinoplasty, and/or inferior turbinate reduction were excluded from the study.

Line 191-199: Postoperative epistaxis was defined as the presence of bleeding greater than expected post-operatively that was identified in the medical record in any medical encounter during the follow-up period.

Comment 7:

Line 172, regarding surgical indications, what degree of deviation of nasal septum resulted in surgery (e.g. mild, moderate, severe, any/all)? Does the indication or threshold for surgery vary based upon patient age? Does pre- or post- puberty affect decision making? What is the typical algorithm at this institution that was in place at the time these patients were treated?

Reply 7:

We thank the reviewer for this comment and agree that further information regarding the severity of septal deviation may be useful, however this data is unavailable to us at this stage. As such, we have included in the discussion suggestions for further research to address this limitation.

Changes in the text:

Line 216-221: While the age demarcation in this study was chosen based on the pubertal transition, significant variation in anatomy and growth may be seen between patients within the *younger* group. To address these differences, further research may seek to include further stratification by age. Additional research may aim to include a multivariate analysis of long-term surgical and quality of life outcomes stratified by type of septoplasty, surgical indication, or severity of septal deviation.

**Reviewer C**

This is a great retrospective review looking at pediatric nasal septoplasty at a large tertiary hospital. The study included 194 patients split into two cohorts: under 14 years and 14 years and older, roughly relating to pre and post pubertal patients.

Some considerations:

1) I am curious if different indications for initial surgeries had different rates of needing revision surgery. In the end it is a balance between the need of the surgery and the complications. So the

initial indication for surgery is crucial in that decision making process.

Reply:

We thank the reviewers for their comments regarding demographics and surgical indications and agree that further data may be useful, however this data is unavailable to us at this stage.

2) Could you describe the clinical indications for the revision surgeries if you have them?

Reply:

We thank the reviewers for their comments regarding demographics and surgical indications and agree that further data may be useful, however this data is unavailable to us at this stage.

3) Why use 14 years and older as the divider? Is there precedent in the literature for this cut off?

As described in your introduction, the above 14 year old group includes "preadolescent males" from 14-16 years old and so is not exactly a post pubertal group.

Reply:

We appreciate your comment regarding the 14 year age cutoff and have explained our reasoning behind the decision and have included reference to the literature.

Changes in the text: The following text was added to the Methods: "The age cutoff was selected based on the average age at completion of the nasofacial growth spurt, which has been shown to be 13.1 in girls and 14.7 in boys.<sup>15</sup>" (Page 6, Line 102-103)

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