Introduction

The septal body is a distinct anatomic structure located on the nasal septum. It is located near the nasal valve and may play a role in regulating nasal airflow. The septal body is an area of mucosa and prominent soft tissue overlying the cartilage and bone.\(^1\) In the majority of cases, the septal body is present bilaterally and can be seen in CT imaging studies. This structure may be analogous to the nasal turbinates in its impact on nasal airflow. Despite its potential contribution to nasal obstruction, it has received little attention clinically.

The relationship between septal deviation and contralateral inferior turbinate hypertrophy has been well described. The goal of this study was to compare the size of the septal body to the laterality of septal deviation. The aim was to determine whether there is a correlation between the laterality of the septal deviation and laterality of septal body prominence.

Methods

One-hundred sinus computerized tomography scans were reviewed. Coronal images were reconstructed from axial images with 0.625 mm slices using the Voxar 3D Workstation (Barco, Kortrijik, Belgium). Data analysis was performed using Microsoft Excel 2003 (Microsoft Corporation, Redmond, WA) and JMP 8.0.1 (SAS Institute, Cary, NC).

Studies with evidence of sinonasal fractures, prior surgical intervention, or lesions were excluded. Measurements were obtained as follows:

• **Septal body**: Point of maximum total septal body width was located. Width on each side was measured from lateral aspect of septal body to the bony septum (Figure 1). The difference in the septal body sizes was calculated to determine the degree of septal body asymmetry.

• **Laterality of septal deviation**: Direction of deviation was recorded at the level of maximum septal body width.

• **Degree of septal deviation**: A line was drawn between the crista galli and the premaxilla. A second line was drawn between the crista galli and the most prominent point of the septum. The angle between these lines was measured (Figure 2).

Results

The average total width of the septal body was 9.3 mm. In 99 cases, the septal body was significantly larger on the side opposite the nasal septal deviation (p<.05). A positive difference in septal body size indicated that the septal body contralateral to septal deviation was larger than the septal body on the same side of deviation. The degree of septal deviation was classified as mild (\(<8^\circ\)) in 27 cases, moderate (9-15\(^{\circ}\)) in 36 cases, and severe (\(>16^\circ\)) in 27 cases. In ten cases, no evidence of septal deviation was seen.

The mean difference in septal body size was 3.98 mm in cases with severe septal deviation, 1.97 mm in cases with moderate deviation, and 1.21 mm in cases with mild septal deviation. In each group, the septal body was larger on the side away from the septal deviation. Patients with severe septal deviation had significantly larger differences in septal body size than did patients with mild or moderate septal deviation (p<.05). Patients with no septal deviation had equally sized septal bodies.

The correlation between the severity of the septal deviation and difference in the septal body size on the two sides of the septum was high (r = .78). Figure 3 shows the results of a simple regression analysis using a linear model. For this model, R\(^2\) = .61 and the slope parameter estimate is .22 (p<.0001).

Discussion

The septal body has been described in the literature using numerous terms including nasal septal swell body, intumescentia nasi anterior, and septal turbinate. Despite these many names, its exact role in nasal airway physiology has not been clearly delineated. Some authors suggest that this structure affects airflow in a manner similar to the inferior turbinate because it is comprised of expansible vascular tissue.\(^1\)

Compensatory inferior turbinate hypertrophy in patients with septal deviation has been described and studied. This compensatory hypertrophy on the side opposite the septal deviation can impact the medical and surgical treatments in patients with nasal obstruction. The septal body is also located in the anterior nasal cavity, and contributes to the anatomy of the nasal valve.\(^4\) Because of its contribution to nasal airflow, findings of compensatory septal body hypertrophy may also impact treatment for patients with nasal obstruction.

Computerized tomography is an appropriate method of evaluating the septal body, as many patients will have undergone sinonasal imaging prior to otolaryngologic evaluation.\(^5\) This study demonstrates a strong relationship between septal deviation and contralateral septal body hypertrophy.

Future investigation should focus on the treatment of this hypertrophy and its effects on alleviating nasal obstruction.

Conclusions

• **The septal body is more prominent on the side contralateral to septal deviation**
  • Patients without septal deviation had septal bodies of the same size.

• **The difference in septal body size increases as septal deviation increases**
  • Patients with severe septal deviation had the greatest difference in septal body size compared to patients with mild or moderate septal deviation.

• **The role of the septal body is further characterized as a septal turbinate**
  • Compensatory hypertrophy is seen with septal deviation, similar to that seen of the inferior turbinate.

References