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ORIGINAL ARTICLE

Evaluation of septoplasty patients with CT scan

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ABSTRACT:

Background: Deviated nasal septum is frequent complaints for which patient seeks ENT consultation. The present study was conducted to assess septoplasty patients with the help of CT scan. **Materials & Methods:** 80 patients of deviated nasal septum (DNS) both genders underwent septoplasty operations were performed under general anesthesia. All patients underwent computerized tomography (CT). **Results:** Age group 10-20 years had 34, 20-30 years had 28, 30-40 years had 11 and >40 years had 7 patients. The difference was significant (P< 0.05). Right internal nasal valve angle (RINVA) was 10.72 degree, left internal nasal valve angle (LINVA) was 9.86 degree, left external nasal base area (LENBA) was 1.12 degree, right external nasal base area (RENBA) was 1.12 degree, left internal nasal valve area (LINVAr) was 0.42 degree and right internal nasal valve area (RINVAr) was 0.48 degree. **Conclusion:** Deviated nasal septum is common ENT complaint. CT scan is useful in assessment of cases of septoplasty in adults.

Key words: CT scan, Septoplasty, Imaging modality

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INTRODUCTION

Deviated nasal septum is frequent complaints for which patient seeks ENT consultation. The nose is one of the essential parts of the respiratory system. Nasal obstruction is the most common symptom leading to the decision to carry out septoplasty procedures.[1] Nasal obstruction symptoms can be related to several etiologic factors such as nasal septal deviation, turbinate hypertrophy, and nasal valve incompetence. The internal and the external nasal valve are the two distinct locations which play an essential role in maintaining physiological nasal airflow. The internal nasal valve area (INVAr) is defined by the nasal septum.[2]

Imaging is occasionally performed as part of the deviated septum assessment. CT scanning of the nose and paranasal sinuses is one of the common imaging modalities used in otolaryngology.[3] CT could recognize pathological findings that could not be found on physical examination and is helpful to decide the location and the type of surgery. However, no strict guidelines are available for the diagnostic use of CT scanning in nasal septal deviation.[4]

In otorhinolaryngology, NSD is one of the most frequent diagnoses, and it is generally based on the evaluation of patient symptoms and on anterior rhinoscopic outcomes.[5] This clinical analysis is accompanied by quantitative diagnostic methods used to demonstrate the septal deviation. In particular, cross-sectional images allow the correlation of patient symptoms to the airway anatomy of both the anterior and posterior nasal cavity before surgery.[6]The present study was conducted to assess septoplasty patients with the help of CT scan.

MATERIALS & METHODS

The present study was conducted among 80 patients of deviated nasal septum (DNS) both genders. All patients were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. All septoplasty operations were performed under general anesthesia with conventional or endoscopic techniques. All patients underwent computerized tomography (CT). Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Age wise distribution of patients

Age groups (Years)	Number	P value
10-20	34	0.05
20-30	28	
30-40	11	
>40	7	

Table I shows that age group 10-20 years had 34, 20-30 years had 28, 30-40 years had 11 and >40 years had 7 patients. The difference was significant (P< 0.05).

Table II Distribution of discriminative nasal variables

Variables	Values (Degree)
RINVA	10.72
LINVA	9.86
RENBA	1.17
LENBA	1.12

LINVAr	0.42
RINVAr	0.48

Table II shows that right internal nasal valve angle (RINVA) was 10.72 degree, left internal nasal valve angle (LINVA) was 9.86 degree, left external nasal base area (LENBA) was 1.12 degree, right external nasal base area (RENBA) was 1.12 degree, left internal nasal valve area (LINVAr) was 0.42 degree and right internal nasal valve area (RINVAr) was 0.48 degree.

DISCUSSION

Diagnostic investigations currently used for this pathology are anterior rhinoscopy, endoscopy, multi-slice CT and MR, which allows a good evaluation of the entity and position of NSD.[7,8] In particular, pre-operative CT scan of the paranasal sinus is often performed before septoplasty, in order to evaluate nasal anatomy, to find concomitant sinonasal pathologies and to reduce surgical failure.[9] Treatment of nasal obstruction due to a deviated septum may include the use of medication to reduce tissue swelling, yet, surgery is often necessary to correct the deviation to alleviate patient symptoms.[10] The present study was conducted to assess septoplasty patients.

We found that age group 10-20 years had 34, 20-30 years had 28, 30-40 years had 11 and >40 years had 7 patients. Karatas et al[11] evaluated images of 46 subjects who underwent CBCT for reasons not related to this study. Two experienced operators divided all the images into healthy and NSD subjects. Differences between the groups were found in SDA, in volume percentage difference and in SDI. PCA showed high correlation between the SDI and the first principal component.

We observed that right internal nasal valve angle (RINVA) was 10.72 degree, left internal nasal valve angle (LINVA) was 9.86 degree, left external nasal base area (LENBA) was 1.12 degree, right external nasal base area (RENBA) was 1.12 degree, left internal nasal valve area (LINVAr) was 0.42 degree and right internal nasal valve area (RINVAr) was 0.48 degree. Cho et al[12] conducted a study to interpret the value of nasal valve areas measured by PNCT for both septoplasty candidates and the control population. There were 192 (64%) patients with left nasal septal deviation and 108 patients with right nasal septal deviation. The mean internal nasal valve angle in the left septoplasty group was significantly lower than that of the control group. A comparison of the right side nasal values revealed a significant statistical change between the value of the right septoplasty and the control groups.

CONCLUSION

Authors found that deviated nasal septum is common ENT complaint. CT scan is useful in assessment of cases of septoplasty in adults.

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