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Anatomic Variants of Paranasal Sinuses and Chronic Sinusitis

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Abstract:

Background/Objectives: There are normal anatomic variants of paranasal structures, with concha bullosa (pneumatization) of the middle turbinate and septal deviation being the most common. It is assumed that these anatomic variants contribute to chronic sinusitis by blocking normal sinus drainage. This study investigated this assumption among the chronic sinusitis patients referring to Radiology departments affiliated to Medical Sciences universities. **Patients and Methods:** A case-control study was carried out on 148 patients with a clinical diagnosis of chronic sinusitis who were referred for a sinus CT scan by ENT specialists. The control group (n= 78) were chosen from the ENT clinic patients with diagnoses other than sinusitis. The association between the anatomic variants (concha bullosa of inferior and middle turbinate, agger nasi cell, haller cell, giant ethmoidal bulla, septal deviation and inverted uncinate process) and existence of chronic sinusitis was shown with odds ratio (OR) and 95% confidence interval. Logistic regression analysis was performed for adjusting the confounders. **Results:** One hundred and eight (47.8 %) patients were male. The mean (\pm SD) age was 35.5 (\pm 12) years. No difference was seen in the age and gender distribution between the cases and controls. Septal deviation and concha bullosa of middle turbinate were the anatomic variants significantly associated with chronic sinusitis (respectively OR= 2.04, CI: 1.07-3.89; and OR= 2.19, CI: 1.12-4.30). Besides, we found that agger nasi cell (OR: 0.7, CI: 0.64-0.77) and inverted uncinate process (OR: 4.76, CI: 1.92-24.5) were associated with the occurrence of ethmoidal and frontal sinusitis, respectively. No confounding effect was seen on logistic regression analysis. **Conclusion:** Normal anatomic variants of paranasal sinuses may be considered as predictors for the occurrence of chronic sinusitis. The positive effect of any procedure for correction of these variants should be shown through other studies.

Keywords:

[concha nasale](#) . [osteomeatal unit](#)

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