

Are we mindful of nasal dorsal integrity during septal surgery? An imaging study of nasal keystone area

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Abstract

Objectives: Review of radiological images of the keystone area to assess risk of disruption to the nasal dorsum when separating the osseo-cartilaginous junction in septoplasty. **Methods:** A Cross sectional radiological study of adults who underwent CT scan of paranasal sinuses. Outcome measures included were: The Length of the keystone area (shorter length implies a higher risk of disruption) and a high-risk shape (high risk shape implies shorter keystone area) that can predispose to disruption of nasal dorsal integrity during septoplasty surgery. Certain nasal dimensions were evaluated to determine if they add risk to the dorsum. **Results:** CT scans of 343 patients were reviewed. The mean keystone area length was initially 10.42 mm that came down to 7.43 mm after adjustment in patients with high-risk shape. 31.5% of subjects were at risk of disruption to the dorsum due to short keystone area length <5 mm. Relatively shorter nasal bones (nasal bone length: overall dorsal length <0.49%) were associated with a shorter keystone area length ($P = 0.004$). Age, gender, septal deviation are not risk factors as they did not significantly influence keystone area length. **Conclusions:** One third of our patients (31.5%) had short KSA length < 5mm which carries higher risk of disruption to the dorsum integrity upon complete detachment of osseo-cartilaginous junction. We recommend preoperative CT imaging for thorough evaluation and precise measurement of KSA. Patients with relatively shorter nasal bones detected on examination (and confirmed radiologically), need to be recognized as they are more likely to have shorter KSA

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