



## **Could Osteotomies Cause Nasal Obstruction- A Cadaver and CT Guided Study**

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### **Objectives:**

- To evaluate two different nasal osteotomy fracture patterns of high-low-high (HLH) and low-low-high (LLH) when combined with medial osteotomy
- To study the impact on intranasal airway narrowing based on CT before and after osteotomies
- To assess the actual location of nasal osteotomies compared to the planned location
- To assess the width of the nasal airway before and after the osteotomies are performed
- To determine the benefits and drawbacks in the context of nasal airway obstruction and the starting point of the osteotomy location and trajectory

### **Methods:**

Basic science cadaveric study performed in the dissection laboratory of a military treatment center using 22 cadaveric heads divided into HLH and LLH groups. The specimens were evaluated by CT before and after osteotomies. Fracture patterns were analyzed and Student's T test and analysis of variance (ANOVA) were used to assess the differences in intranasal distance mean before and after osteotomies

### **Introduction:**

Rhinoplasty surgeons debate the ideal pattern of performing nasal osteotomies, yet little research has investigated the potential impact for nasal obstruction based on the nasal osteotomy technique utilized.

### **Results:**

A statistically significant difference between pre and post osteotomy intranasal width measurement was seen in the LLH group, but not in the HLH group. ANOVA showed statistically significant interaction effect with a faster reduction in nasal airway distance in the LLH group and a statistically significant difference between the two methods of lateral osteotomy techniques.

### **Conclusions:**

This study demonstrates a statistically significant reduction in intranasal airway width using the LLH osteotomy pattern.