Study on the correlation between nasal septal deviation and chronic rhinosinusitis in pilots

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Introduction

Chronic rhinosinusitis (CRS) is a prevalent disease defined as inflammation of the nose and the sinuses lasting more than 12 weeks.

The nasal septum is an important physiological structure of the nose. The nasal septal deviation (NSD) causes alteration in air flow, mucociliary clearance and effects structures.
Research Background

- Rhinorrhea
- Nasal blockage
- Smell disorders
- Facial pain
- Post-nasal drip

Symptoms
The prevalence of CRS

Clinical reviews in allergy and immunology

Series editors: Donald Y. M. Leung, MD, PhD, and Dennis K. Ledford, MD

Current and future treatment options for adult chronic rhinosinusitis: Focus on nasal polyposis

Claus Bachert, MD, PhD, Luo Zhang, MD, and Phillippe Gevaert, MD

Ghent, Belgium, Stockholm, Sweden, and Beijing, China
Research Background

Original Investigation

Prevalence and Risk Factors of Chronic Rhinosinusitis, Allergic Rhinitis, and Nasal Septal Deviation
Results of the Korean National Health and Nutrition Survey 2008-2012

Jae-Cheul Ahn, MD; Jeong-Whun Kim, MD, PhD; Chul Hee Lee, MD, PhD; Chae-Seo Rhee, MD, PhD

EXPERIMENTAL AND THERAPEUTIC MEDICINE 14: 1519-1525, 2017

Measurement of deformation rate in nasal septum deviation by three-dimensional computer tomography reconstruction and its application in nasal septroplasty endoscopic surgery

GUI YANG¹, HAILIANG ZHAO¹, PENG WANG¹, XIAODONG HAN¹, XINYU ZAO¹, ZHIHAI LAN¹, SHUQI QIU¹-³ and ZHIQIANG LIU²,³

Indian J Otolaryngol Head Neck Surg

ORIGINAL ARTICLE

CT Scan Study of Influence of Septal Angle Deviation on Lateral Nasal Wall in Patients of Chronic Rhinosinusitis

R. K. Mundra · Yamini Gupta · Richi Sinha · Alaknanda Gupta
Methods

169 pilots were included

188 pilots with CRS

19 pilots were out

with NSD (n=106)

Non high deviation with CRS (n=38)

in narrow side

in both sides

in wide side

High deviation with CRS (n=68)

in narrow side

in both sides

in wide side

without NSD (n=63)
Results and Discussion

High deviation

- 17.65% in wide side
- 52.94% in both sides
- 29.41% in narrow side

Non high deviation

- 18.42% in wide side
- 55.26% in both sides
- 26.32% in narrow side

P > 0.05
The rhinosinusitis of each group involved by the wide and narrow side of nasal septum (n=106)

<table>
<thead>
<tr>
<th>Deviation types</th>
<th>Rhinosinusitis</th>
<th>Anterior group</th>
<th>Posterior group</th>
<th>Whole group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide side</td>
<td>18</td>
<td>20</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Narrow side</td>
<td>27</td>
<td>17</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 6.6739, P = 0.0355 < 0.05 \]
Results and Discussion

Compared with the general researchers

1. The higher prevalence
2. The scope of sinuses involved were wider
3. The manifested heavily diseases
Results and Discussion

The change of pressure in the nasal sinus

NSD

Aerosinusitis

Swollen nasal mucosa
Conclusion and Prospect

• NSD is related to the formation of CRS.
• Different types of NSD have different influences on the formation of CRS.
Thank you for your attention