

## Uncinate process deviation in patients with odontogenic sinusitis: a computed tomographic evaluation

Laura Dal Pozzo<sup>1</sup>, Giovanni Felisati<sup>2</sup>, Alberto Maria Saibene<sup>2</sup>, Guia Carola Guenza<sup>1</sup>, Alessandro Vinciguerra<sup>2</sup>, Gaia Pellegrini<sup>1</sup>, [Claudia Dellavia](#)<sup>1</sup>

<sup>1</sup> Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Milano, Italy - <sup>2</sup> Dipartimento di Scienze della Salute, Università degli Studi di Milano, Milano, Italy

The uncinat process of the ethmoidis is one of the anatomic boundaries of ostiomeatal complex. Its relationship with the maxillary sinus ostium makes it the key landmark for endoscopic sinus surgery. Many authors denied a direct role of the uncinat process in the development of sinonasal infections (1). Nevertheless, chronic sinonasal diseases are often accompanied by an uncinat process antero-medialization, most notably in presence of an odontogenic etiology. This study aimed to retrospectively analyze uncinat process anatomy on computed tomographic (CT) scans, defining the association between uncinat process inclination and sinonasal health status. Sinonasal CT examinations of 46 individuals were reviewed, comparing patients without clinical and radiographic signs of sinonasal diseases (Group I), and patients diagnosed with odontogenic sinusitis according to the criteria proposed by Felisati et al. (2)(Group II). Uncinat process inclination was calculated by Radiant Dicom Viewer software, as the angle between the straight line connecting the antero-superior and the postero-inferior part of uncinat process, and the axis of symmetry, passing through sphenoidal rostrum and perpendicular to bizygomatic line. For each patient three axial scans (the most cranial, median, the most caudal), in which uncinat process was clearly detectable, were selected and a mean value was computed. Descriptive statistics of uncinat process inclination were calculated separately in the two groups. In Group I the mean angle was  $13.18^{\circ} \pm 10.33^{\circ}$  with confidence limits (CL) (99%) between  $6.21^{\circ}$  and  $20.15^{\circ}$ , in Group II the mean angle was  $29.89^{\circ} \pm 9.56^{\circ}$  with CL between  $24.44^{\circ}$  and  $35.34^{\circ}$ . From these preliminary results, a marked medial deviation of uncinat process was identified in odontogenic sinusitis compared to healthy sites. Additional assessments are required to confirm the role of this anatomical variation in the pathogenesis of odontogenic sinusitis.

### References

- [1] Tuli et al. (2013) Anatomical variations of uncinat process observed in chronic sinusitis. *Indian J Otolaryngol Head Neck Surg* 65:157-61.
- [2] Felisati et al. (2013) Sinonasal complications resulting from dental treatment: outcome-oriented proposal of classification and surgical protocol. *Am J Rhinol Allergy* 27:101-6.

### Keywords

Uncinat process; odontogenic sinusitis; sinonasal computed tomography.