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

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The uncinate process of the ethmoid 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 uncinate process in the development of sinonasal infections (1). Nevertheless, chronic sinonasal diseases are often accompanied by an uncinate process antero-medialization, most notably in presence of an odontogenic etiology. This study aimed to retrospectively analyze uncinate process anatomy on computed tomographic (CT) scans, defining the association between uncinate 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). Uncinate 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 uncinate 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 uncinate process was clearly detectable, were selected and a mean value was computed. Descriptive statistics of uncinate process inclination were calculated separately in the two groups. In Group I the mean angle was 13.18° ± 10.33° with confidence limits (CL) (99%) between 6.21° and 20.15°, in Group II the mean angle was 29.89° ± 9.56° with CL between 24.44° and 35.34°. From these preliminary results, a marked medial deviation of uncinate 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


Keywords
Uncinate process; odontogenic sinusitis; sinonasal computed tomography.