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Prevalence Of Anatomical Variations In Cribiform Plate And Crista Galli Process A Retrospective Study 1 Year Experience Of Paranasal Sinuses Ct

César A. Nunes [1] , Inês Carreiro, Cristina Moura

1. H.U.C.-C.H.U.C. 2.

Corresponding author: César A. Nunes, cesarnunes@me.com

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Abstract

Introduction: The anterior cranial fossa floor is formed by three bones - frontal, ethmoid and esphenoid. Knowing the different anatomical variations, in particular, from the etmoidal portion of the neurocranium, its of the outermost importance for performing a safe Endoscopic Sinus Surgery. The pneumatized Crista Galli and specially the different kind of junctions between the cribriform plate and the planum ethmoidale, represents the most important variations frequently observed. Objective: Evaluate the anatomical variations of the ethmoidal portion of the anterior fossa and its theoretical risk in performing endoscopic sinus surgery. Materials e methods: Retrospective study of 672 paranasal sinuses computed tomography (CT) in the coronal plane, made since January to December of 2011. To classify the union between the cribriform plate and the cranium floor we used the Keros classification. We also perform another three measures - the length of the middle turbinate, the maximal height of the orbit and the distance between the ethmoid roof and the nasal floor. Results: Keros type II was the most common finding in the reviewed CTs (approximately 48%), Keros type I represent 41% and Keros type III the last 11%.The maximum olfactory fossa depth was 16mm. The length of the middle turbinate was negatively associated with the Keros type. The distance between the ethmoid roof and the nasal floor was positively correlated with the olfactory fossa depth. The Crista Galli process was pneumatized in approximately 7% of the patients Conclusion: Concordantly with other studies we found that the Keros II type was the most frequent observation. Greater depths are constantly associated with greater risk of intracranial penetration when performing endoscopic surgery, so the ENT surgeon must know the kind of relationship between the cribriform region and medial ethmoid roof. It´s also important to correctly identify the aeration of the Crista Galli, since as we now know the pneumatization process come from the frontal sinuses, and the inflammatory frontal diseases can extend to that process.

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