

The study of osteitic changes in CT paranasal sinus of atopic and non-atopic chronic rhinosinusitis

Mohamad NS, MD¹, Abdullah B, MBBS, MMed¹, Mohamad S, MD, MMed¹, Aziz ME, MD, MMed²

¹Department of Otorhinolaryngology, Head & Neck Surgery, Universiti Sains Malaysia, Kelantan, Malaysia, ²Department of Radiology, Universiti Sains Malaysia, Kelantan, Malaysia

ABSTRACT

Introduction: The aim of the study is to look for osteitic changes in paranasal sinus walls in patient with the atopic and non-atopic chronic rhinosinusitis (CRS) by computed tomography (CT) scan evaluation using Lund Mackay staging system and Global Osteitis Scoring System. **Methods:** This is a retrospective study of patients that were diagnosed with chronic rhinosinusitis and had done CT paranasal sinus within the period of January 2015 until December 2020. Patients with the history of craniofacial trauma, sinonasal malignancy, pregnant and below 18 years old were excluded. CT images that were evaluated were only the CT taken before any sinonasal surgery. Skin prick test was used to determine the atopy among the CRS patients. Another 66 patients that had CT scans within the same period and did not have CRS, facial trauma or sinonasal malignancy were included as a control group. The radiological findings for disease severity and osteitic changes in the both atopic and non-atopic CRS and the control group were evaluated using Lund Mackay staging system and Global Osteitis Scoring system (GOSS). **Results:** There were 54.7%(n=41) of CRS patients showed atopy in skin prick test. More than half of the CRS patients showed osteitic changes in the radiological assessment 64%(n=48), whereby only 3% (n=2) in the control group. However, there was no significant association between CRS severity and osteitic changes in both atopic and non-atopic groups (p>0.05%). The mean score for Lund Mackay found higher in non-atopic group which is 9.03(SD=5.07) but the mean score for GOSS was found higher in atopic group 10.90(SD=10.50). **Conclusion:** CRS is a disease with multifactorial pathogenesis. Allergy status alone cannot conclude the severity of the disease and predicting risk for the osteitis.

Anterior ethmoid “genu”: A new anatomical landmark to guide frontal sinus and anterior ethmoid endoscopic surgical dissection

Kugan Raman, MBBS, MRCSEd¹, Revadi Govindraj, MD, MS (ORL HNS)¹, Mohammad Nazri Bin Md Shah, MBBS, MRad², Naishadh Patil, DLO, MD, FRCS ORL, Karl James, FFR (RCSI), FRCR⁴

¹Department of Otorhinolaryngology, University of Malaya, Kuala Lumpur, Malaysia, ²Department of Radiology, University of Malaya, Kuala Lumpur, Malaysia, ³Department of Otorhinolaryngology, Sligo University Hospital, Sligo, Ireland, ⁴Department of Radiology, Sligo University Hospital, Sligo, Ireland

ABSTRACT

Introduction: Thorough knowledge of anatomical variations in paranasal sinus structures and recognition of endoscopic landmark vital in performing safe and effective endoscopic sinus surgery. This multicentre retrospective radiological study explores the feasibility of using a newly appreciated anatomical landmark “Anterior Ethmoid Genu” (AEG) to guide frontal sinus and anterior ethmoid endoscopic surgical dissection. **Methods:** Multiplanar reconstruction on high-resolution computed tomography (CT) of paranasal sinuses was done to identify anterior ethmoid genu, its morphology, and characterize its position in the frontal sinus drainage pathway in relation to other frontal recess cells. **Results:** Anterior Ethmoid Genu constantly present in all CT paranasal sinuses independent of age, gender, and race. The frontal sinus drains medial to anterior ethmoid genu in 96% of cases. The position of AEG in the frontal sinus drainage pathway showed moderate correlation with vertical height of agger nasi. **Conclusion:** This study describes anterior ethmoid genu can be used as a landmark for frontal sinus surgery since its prevalence is 100%, frontal sinus drainage is mostly medial to it and it is easily detectable with high resolution CT scan of paranasal sinuses. Its usage as a landmark during frontal sinus surgery will further assess the realistic feature of anterior ethmoid genu in surgical practice.