



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2019; 5(4): 15-17  
www.allresearchjournal.com  
Received: 05-02-2019  
Accepted: 08-03-2019

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## **A study of anatomical variations in chronic rhinosinusitis with special reference to deviated nasal septum**

**Ashirbad Jena and Santosh Kumar Swain**

### **Abstract**

Rhinosinusitis is an inflammation of the nose and paranasal air sinuses. Acute viral rhino sinusitis often referred to as common cold is the commonest viral infection in man and commonest inflammatory disorder encountered. 102 cases of chronic Rhinosinusitis were selected from those attending the ENT Outpatient Department and admitted indoors from July 2016 to Oct 2017. The incidence of acute and chronic sinusitis was 16.4% and 83.6% respectively. Most commonly affected were of age group 21-30 with incidence of 38.2%, Male predominance was seen with 67.6%. Maxillary sinusitis showed the highest prevalence with 62% followed by Pansinusitis at 30%.

**Keywords:** Rhinosinusitis, chronic, paranasal

### **Introduction**

Rhinosinusitis is an inflammation of the nose and paranasal air sinuses. The paranasal sinuses are a group of four paired air filled spaces that surround the nasal cavity. The paranasal sinuses are divided into anterior, posterior and sphenoid compartment that serve as functional unit based on these drainage pathways. Acute viral rhino sinusitis often referred to as common cold is the commonest viral infection in man and commonest inflammatory disorder encountered by general practitioner and otorhinolaryngologist all over the world. The aims of the study include studying the incidence of chronic rhinosinusitis, the clinical pictures and radiological investigation of chronic rhinosinusitis. The anatomical variations impact in progression of disease was also studied along with any modification in management due to it. Hardly any organs of human body are liable to remarkable inter and intra subject varieties as paranasal sinuses. The range of anatomic variations that can meddle with the mucociliary waste of ostiomeatal complex including concha bullosa, veered off nasal septum, uncinat process variations, ethmoid bulla, dumbfounding center turbinate, agger nasi and Haller cells [1]. Right now, registered tomography is the technique for decision for evaluation of paranasal sinuses, nasal fossae furthermore, their anatomical variations. Probably, these varieties might prompt osteal deterrent, forestalling bodily fluid waste and inclining to endless rhinosinusitis. Varieties and tomographic indications of sinusal illness happening on a similar side strengthen the probability of impedance with the bodily fluid seepage process [2]. Figured tomography offers detailed study of anatomical variations.

### **Material and Methods**

In the present study 102 cases of chronic Rhinosinusitis were selected from those attending the ENT Outpatient Department and admitted indoors from July 2016 to Oct 2017. CT scanning of the Paranasal sinuses was done by using a GE Optima 660 scanner and radiological evaluation was done.

### **Results and observations**

An aggregate of 85 patients of endless rhinosinusitis were analyzed. Nearness of different anatomical variations in connection to ceaseless rhinosinusitis were watched. Out of 85 patients 58 were guys and 27 were females with male female proportion being 2.1:1. The different instances of endless rhinosinusitis are isolated into five age gatherings and the most extreme number of patients were found in age gathering 21– 30 pursued by age bunch 10– 20 years, and least in age group 50 years (Figs. 1, 2).

The blow figure 3 shows that the most common anatomical variant in association with chronic rhinosinusitis in CT scan

analysis and Maxillary sinusitis showed the highest prevalence with 62% followed by Pansinusitis at 30%.

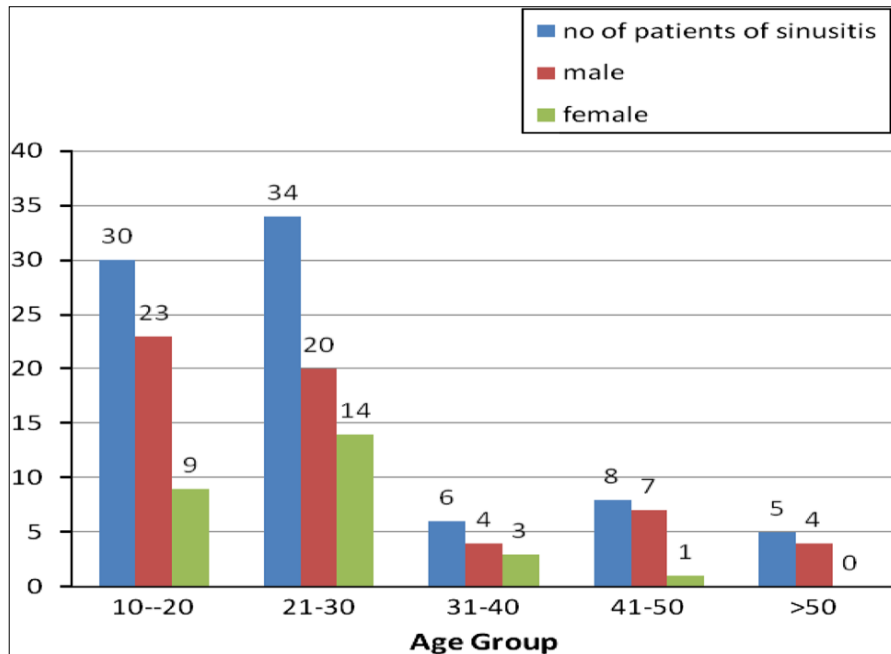


Fig 1: Distribution according to age group in patients of chronic sinusitis

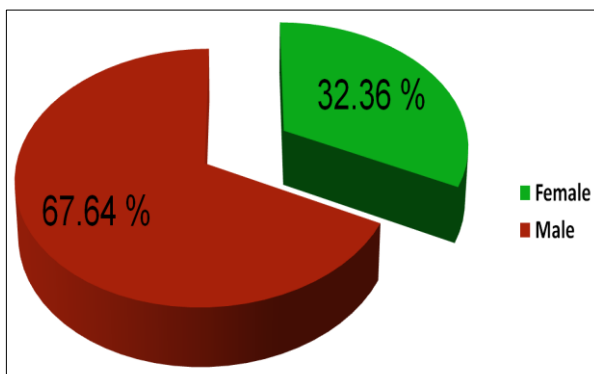


Fig 2: Sex ratio in patients of chronic sinusitis

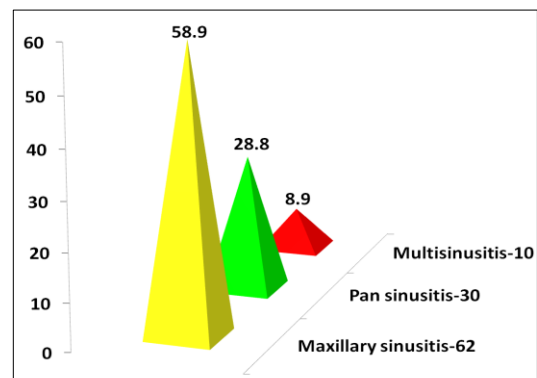


Fig 3: Incidence of sinusitis

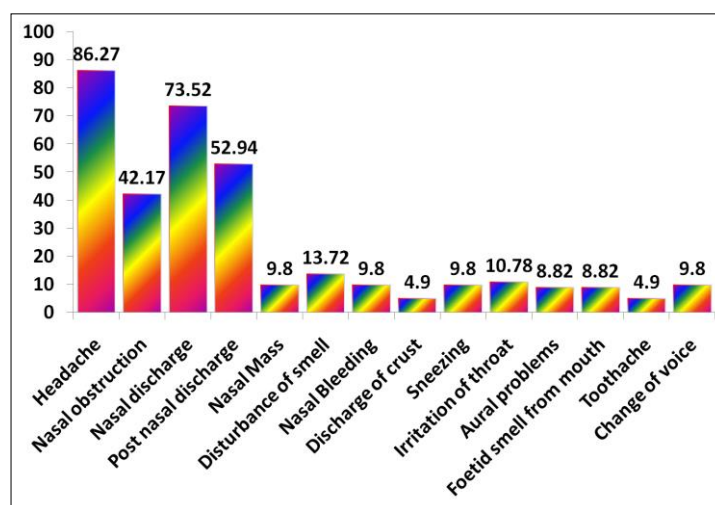


Fig 4: Incidence of Symptoms in CRS

Similarly the incidence of Symptoms in CRS shows highest is headache (86.27) followed by nasal discharge (73.52). post nasal discharge and nasal obstruction also seen in this study.

**Discussion**

Electronic tomographic imaging of sinonasal area has turned into the best quality level in the assessment of patients with incessant sinusitis. Its capacity to precisely outline the hard

and delicate tissue life structures of the paranasal sinuses has demonstrated significant to the endoscopic specialist in the indicative workup. Endoscopic examination related to CT has ended up being perfect blend as of late and are officially acknowledged as the "Standard of Care" for sinus infections <sup>[4, 5]</sup>. Anatomic varieties like nasal septal deviation, goads, concha bullosa, agger nasi cells, dumbfounding center turbinate, uncinata bulla, medially of along the side twisted uncinata process, larger than average ethmoidal bulla and so forth. These anatomic variations encroach on the patency of officially tight complicated ostiomeatal channels, subsequently, inclining to sinusitis by meddling with mucociliary leeway of ostiomeatal zone <sup>[6]</sup>.

The occurrence of agger nasi cells in patients with ceaseless sinusitis on coronal CT discoveries, Bolger *et al.* <sup>[7]</sup> revealed it to be 98.5%, and Zinreich <sup>[8]</sup> found these cells in almost all patients, while Llyod <sup>[9]</sup> depicted it in 3%. It was 7% in our examination. Haller cells were available in 3.5% in our investigation, Bolger *et al.* <sup>[7]</sup> revealed Haller's cells in 45.1% of the cases. The 45.1% commonness of Haller's cells noted by Bolger *et al.* is altogether higher than that detailed by Zinreich <sup>[8]</sup> that is 10%. Unmistakable ethmoidal bulla was available in 63.5% in our examine.

### Conclusion

It was found in this examination that when a one-sided concha bullosa is available, there is no measurable association with any sinus infection. There is be that as it may, a solid relationship between the nearness of one-sided concha and contra-sidelong nasal septal deviation. Ability of good imaging and Endoscopic technique has added value to qualify diagnosis and treatment options with comparison of findings and treatment measures and result with other centers. The diagnosis of Rhinosinusitis of mainly clinical and patients with Rhinosinusitis presented with various clinical scenarios with various therapeutic challenges in the region. It must be emphasised that availability of good imaging and endoscope facilities in the region will improve the diagnosis and treatment option in this region.

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