



## Computed Tomography is used to assess sinonasal diseases

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### Commentary

In patients with sinonasal diseases, computed tomography (CT) plays an important diagnostic role and determines treatment. The CT images effectively highlight the fine structural architecture of bone anatomy, allowing diverse anatomical variations, disease extent, and characterization of various inflammatory, benign, and malignant sinonasal disorders to be determined. CT is the imaging modality of choice for evaluating various congenital, inflammatory, benign, and malignant diseases and associated problems in the sinonasal area, as well as planning the patient's future care. The best modality for evaluating bone erosion or disintegration is computed tomography (CT). Fungal sinusitis and thick secretions are two major difficulties to distinguish on CT.

Sinonasal imaging has advanced in a systematic manner, with each generation of imaging modality steadily expanding on the domain of the previous generation. The picture of sinonasal imaging has entirely transformed thanks to a new generation of imaging techniques. Plain radiography was once the most common procedure; however, endoscopic sinus surgeons now choose Computed Tomography (CT) for higher anatomic precision. Sinonasal disease is a word that refers to a group of diseases and ailments that affect the nasal canal and paranasal sinuses. Sinonasal diseases encompass a wide range of illnesses, from inflammatory to benign and malignant neoplasms. Because the clinical signs in these situations can be non-specific, radiographic examination of sinonasal disorders is critical. Plain radiography, computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET) are some of the imaging modalities available. Each of these modalities has its own set of benefits and drawbacks. Plain films are no longer regarded part of the core imaging arsenal because they simply provide a sketch of the anatomy and disease.

The CT and MRI have the advantage of being able to reveal precise anatomic information in serial tomographic sections, which eliminates the large volume averaging that occurs with plain films. Because CT pictures vividly show air spaces, opacified sinuses, and fine structural architecture of bone anatomy, it has

become the investigation of choice for radiological diagnosis of nose and sinus illnesses. Multidetector CT (MDCT) can be used to test the patency of sinonasal passageways and reveal how anatomic variations, inflammatory illness, or both might affect patency. MDCT is the study of choice for surgeons considering functional endoscopic sinus surgery because it can reveal anatomic structures that are not seen by physical examination or diagnostic nasal endoscopy.

CT is also useful in ruling out the presence of aggressive infections or neoplasms with extra-sinus extension, osseous damage, and local invasion. MRI can be used to diagnose sinusitis problems, extra-sinus cancer extension, and to assess intracranial extension. In examining fine bone details, fibro-osseous lesions of the PNS, and sinofacial injuries, CT is better than MRI. By evaluating the distribution and extent of disease, CT aids in the diagnosis and management of recurring and chronic sinonasal disease. Because of its 3D high resolution, CT is better at characterising complicated sinonasal anatomy and anatomic variants that are unavailable by physical examination or endoscopy. CT is the gold standard for describing inflammatory sinus disease caused by obstruction and is the examination of choice for pre-operative evaluation of the nasal cavity and paranasal sinuses. The surgical technique and the coronary CT scans are highly correlated. CT aids in the diagnosis of anatomic variations that may result in intra-operative and post-operative FESS problems, as well as lowering patient mortality and morbidity. In the examination of sinonasal disorders, a combination of CT and diagnostic endoscopy has become the gold standard. As a result, CT is quite valuable and provides standard imaging of sinonasal disorders. The purpose of this study was to characterise various benign and malignant sinonasal lesions using various CT parameters, and to correlate CT findings with histopathological findings and diagnostic nasal endoscopy/functional endoscopic sinus surgery, as well as to determine the sensitivity and specificity of CT in the diagnosis of sinonasal diseases.

The importance of CT in the diagnosis and characterization of various sinonasal disorders is highlighted in this work. It demonstrates that CT has a higher sensitivity and specificity in

evaluating several sinonasal diseases in symptomatic patients for diagnosis, staging, and hence better care planning. The best modality for analysing osteomeatal complex architecture,

alterations, and assessing bone changes in various sinonasal disorders is computed tomography (CT).