

## The cone beam computed tomography of the nose and paranasal sinuses: indications and aspects of radiation exposure rates

Jürgen G Ramming, Marion Ramming

ENT and Dental Medicine Centre Schweinfurt, Germany, Spitalstr. 32, 97421 Schweinfurt

### ABSTRACT

**Objective:** Radiologic examination are absolutely important in the diagnosis of diseases of the nose and paranasal sinuses disease and anomalies. Unfortunately, the eyes are always in the direct path of x-rays. In the last years the normal conventional computed tomography (CT) is more and more replaced by the cone beam CT (CBCT). The purpose of this paper is to evaluate the differences in exposure rates between the two radiologic methods in comparison to natural and environmental factors. **Methods:** To assess the significance we rank natural and environmental factors due to their importance. Then we compare the exposure rates of the standard CT with CBCT. We also discuss the role of "low-dose-protocols" and the influence of scattered radiation in radiology. Important examples and clinical data underlining the special aspects are demonstrated with reference to the eyes. **Results:** The advantage from the radiological point of view is the extremely low dose of radiation of the CBCT in comparison to the standard medical CT and substantial less scattered radiation. In comparison to natural or environmental factors the exposure rates are negligible. **Conclusion:** In our belief the cone-beam computed tomography (CBCT) is a very useful tool in the diagnosis of sinusitis, especially concerning the exposure of radiation referring to the eyes.

---

## Silent sinus syndrome: unusual presentation of isolated upper alveolar numbness and a current literature review

Lau HT, Lim KH, Siow JK

Tan Tock Seng Hospital, Singapore

### ABSTRACT

**Objectives:** The objectives of this presentation are firstly, to describe the unusual presentation of unilateral upper alveolar numbness as a symptom of silent sinus syndrome and detail the subsequent treatment and postulated pathogenesis in the case reported. Secondly, this presentation aims to review the current literature on the relatively uncommon entity of silent sinus syndrome. **Methods:** A case of a patient with unilateral left anterior alveolar numbness, diagnosed with left silent sinus syndrome and the subsequent surgical management in a tertiary Singapore institution was reported. A comprehensive literature review of the pathophysiology, clinical and radiological features of silent sinus syndrome and its associated entity – chronic maxillary atelectasis, was carried out. **Results:** A 59-year-old Chinese male presenting with left anterior alveolar numbness was diagnosed with left silent sinus syndrome. Computed tomography imaging demonstrated bony osteitic encasement of the left anterior superior alveolar nerve within a contracted left maxillary sinus. The patient underwent successful left functional endoscopic sinus surgery (left concha bullectomy, uncinectomy and medial maxillary antrostomy) to re-establish maxillary sinus ventilation. Current theories on the aetiology, pathophysiology and management strategies of silent sinus syndrome was discussed. **Conclusion:** We present the first-ever description of isolated unilateral upper alveolar numbness in a patient with silent sinus syndrome. Chronic osteitis with resultant narrowing of the anterior superior alveolar nerve bony canal was postulated to cause nerve compression and the clinically noted paraesthesia. Recognition of the clinical features of the rare condition of silent sinus syndrome is important for appropriate management.