ABSTRACT

Background:
Cone beam computed tomography (CBCT) is custom-designed for evaluation of hard tissues in the craniofacial area and has been in use since 1998. It has been applied in various areas in dentistry including implantology, orthodontics and assessment of maxillofacial and dental pathology.
CBCT scans can cover wider areas which are outside the dentist's area of interest such as the paranasal sinuses and airway spaces, intracranial structures, base of the skull, the cervical spines and the neck.
Previous studies have shown that assessment of these areas may reveal significant incidental findings which may benefit from further investigations and/or immediate management. Therefore, it is the moral and ethical responsibility of the dentist to ensure that the requested images are fully reviewed and significant findings are followed up.
However, the pathology in the sinus may be as a result of respiratory diseases, dental and maxillary jaw bone pathology or may be a primary sinus pathology. Hence, a multidisciplinary teamthat includes the dentist, radiologist, oral and maxillofacial surgeon as well as the Ear, Nose and Throat specialist is paramount in the diagnosis and accurate management of conditions and pathology involving the maxillary antrum.
CBCT imaging is now available in Kenya.
However, in this country a study on incidental findings on CBCT images of the maxillary sinus has not been done, hence the need for this study.
Objective:
The aim of the study was to determine the occurrence of incidental pathological and anatomical findings in the maxillary sinus as portrayed in CBCT scans of the oral and maxillofacial area.
Methodology:
This was a retrospective cross sectional descriptive study which was done at a private imaging center (DAMIC). It involved a review of 60 CBCT scans of the maxilla.
Pre-designed data-collection forms were used to collect data from archived CBCT images as well as their respective imaging request forms.
Results:
Majority 40 (67%) of the scans were done on female and 20 (33%) on male patients. (95%) scans were images of the permanent dentition while only 5 (5%) were images of children with a mixed dentition. Most of the scans were required for dental implant site assessment. There were incidental findings in 40 (67%) scans, 35 (68%) had pathologies while 8 (13%) had incidental anatomical findings
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The commonest incidental pathological finding was mucosal thickening (26, 43%), followed by polypoid lesions (9, 15%), opacifiedantrum (1, 2%) and foreign body (1, 2%). Incidental anatomical findings included protrusion of dental roots into the maxillary antrum (2, 4%).
Conclusion:
There were incidental pathological and anatomical findings in the

majority of the reviewed maxillary sinuses. Mucosal thickening was the commonest pathological finding. Due to the high prevalence of incidental findings, the dentists or their radiologist should review the scans in their entirety. This may enhance early detection, prompt referral and management of significant findings so as to avoid legal and medical implications.It is worth noting that accurate diagnosis and management of the conditions and pathologies that afflict the maxillary antrum does not belong to one cadre of clinicians but requires a multidisciplinary approach.