

Retrospective Study of Simple Bone Cyst CBCT Imaging

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Background -

The simple bone cyst (SBC) is a rare non-epithelial cavity that occurs within the mandible in younger individuals.

Clinically, they are asymptomatic & often discovered incidentally during routine radiographic examinations, not always distinguishable from other jaw lesions. This study analyses Cone Beam Computed Tomography (CBCT) scans to seek detailed radiographic descriptive insights of the SBC.

Purpose-

The aim of this observational study is to assess the radiographic distribution and presentation of SBCs in the jaws along with effects on adjacent structures. We hope it will improve the ability for clinicians to recognize SBCs during routine radiographic examinations.

Materials and Methods -

This retrospective study includes 42 CBCT scans of the SBC sent to our dental school radiology department between 2008 & 2023. Study investigators assessed the scans using CS 3D Imaging (CareStream) & OnDemand3DApp (Cybermed) software with multiplanar reconstruction views for measurement analysis and reviews. The lesions were analyzed at 0.5mm increments along the long axis of the defect based on size, location and effects on adjacent structures. Descriptive statistics of means, averages and correlation calculations were employed to assess data distributions.

Conclusions -

- Understanding the radiographic characteristics & distribution patterns of SBCs helps in decision-making regarding diagnosis, need for intervention, effective surgical planning, leading to better patient outcomes.
- A Spearman's rank correlation did not find a significant relationship between lesion size & scan age, although larger lesions were not noted in older scans.
- Additional studies are needed to obtain a greater insight and perhaps the use of AI can help compare radiographic presentations of similar jaw cysts.



