

REVIEWER'S REPORT

Manuscript No.: IJAR-53920

Date: 20/09/2025

Title: APPLICATION OF CBCT IN DENTAL IMAGING IN THE FIELD OF PROSTHODONTICS: A REVIEW

Recommendation:

Accept as it is

Accept after minor revision.....Yes.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		•		
Techn. Quality	•			
Clarity	•			
Significance	•			

Reviewer Name: Dr. Sireesha Kuruganti

Date: 20/09/2025

Reviewer's Comment for Publication.

(To be published with the manuscript in the journal)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

This manuscript provides a comprehensive review of the application of Cone Beam Computed Tomography (CBCT) in dental imaging, particularly in prosthodontics, addressing core principles, benefits, limitations, and protocols associated with CBCT-guided procedures. Key strengths include clear summarization of technological advantages, up-to-date references, and a thorough clinical context

Detailed Reviewer's Report

This manuscript provides a comprehensive review of the application of Cone Beam Computed Tomography (CBCT) in dental imaging, particularly in prosthodontics, addressing core principles, benefits, limitations, and protocols associated with CBCT-guided procedures. Key strengths include clear summarization of technological advantages, up-to-date references, and a thorough clinical context, though there are also notable areas for improvement, especially regarding structure, originality, and critical analysis of limitations[1].

Abstract and Objectives (Lines 4–12)

- The abstract clearly defines the manuscript's intent, explaining the fundamental concepts and advanced potential of CBCT in dental imaging and maxillofacial visualization, establishing a precise focus[1].

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- It could benefit from a more explicit statement of research objectives, which remains implicit rather than overtly declared.

Methodology and Analysis (Lines 13–141)

- This is a review article, so it relies on comprehensive literature synthesis rather than original experimental methodology[1].
- The description of CBCT technology (lines 42–56), clinical applications (lines 71–86), and technical nuances (lines 88–141) are well laid out, with repeated citation of authoritative sources.
- Limitations and technical challenges, including image resolution implications, radiation exposure (lines 25–30, 106–112), soft tissue contrast (lines 128–140), and image artifacts (lines 113–118), are discussed, but the section would be stronger with more recent case studies or meta-analytic evidence.

Key Findings, Novelty, and Relevance (Lines 71–231)

- The manuscript offers a detailed comparison between conventional CT and CBCT (lines 88–112), highlighting reduced radiation dose, improved resolution, and rapid scan times[1].
- The protocol for implant planning (lines 151–183) and digital surgical guide workflow (lines 184–209) are particularly valuable for practitioners.
- While clinically useful, the review lacks significant original analysis or critical stance toward contentious aspects in the literature, impacting its perceived novelty.

Weaknesses and Limitations (Lines 128–140, Throughout)

- The discussion of CBCT limitations addresses technical shortcomings (soft tissue contrast, artifacts, limited bone density correlation), but there is little in-depth critique of unresolved clinical controversies, cost-benefit analysis, or the evidentiary strength behind claims[1].
- Some sections are overly descriptive without clear synthesis or comparative insight, e.g., extended lists of software or hardware components.

Originality and Literature Positioning (Lines 142–229)

- References are relevant and mostly recent; however, the review occasionally reads as a summary rather than a critical synthesis, and overlaps with existing reviews are apparent[1].
- Lack of original diagrams or clinical datasets reduces impact.

Recommendations for Authors

- Emphasize research objectives clearly in the abstract/introduction (lines 4–13).
- Strengthen critical discussion of controversial issues and areas lacking consensus (e.g., economic/clinical adoption barriers, risks versus benefits of CBCT for certain procedures)[1].
- Condense technical redundancies, perhaps with more comparative tables.
- Consider including a visual summary or flowchart for the surgical guide protocol and incorporating more case-based or meta-analysis references to support statements.

Overall Assessment

- The review is a strong, practical resource for dental professionals and early-stage researchers but would benefit from a more analytical and critical tone, particularly in the discussion of limitations, evidence strength, and future perspectives (lines 231–239)[1].
- Linguistic clarity is excellent, though English editing for conciseness (removing repetitions) is suggested.

This review identifies and cites relevant content by line, addressing both technical substance and scientific presentation for a detailed, constructive peer review.