

REVIEWER'S REPORT

Manuscript No.: IJAR-55556

Title: Diagnosis of Oral and maxillofacial cysts using artificial intelligence: a Literature Review

Recommendation:

- ✓ Accept as it is
- Accept after minor revision.....
- Accept after major revision
- Do not accept (*Reasons below*)

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

Reviewer Name: Dr S. K. Nath

Date: 05.01.26

Detailed Reviewer's Report

Strengths of the Study

- The topic addresses a highly relevant and emerging area in oral and maxillofacial radiology and pathology, contributing to ongoing technological integration in clinical diagnostics.
- The systematic literature review provides a comprehensive overview of AI applications in diagnosing oral cysts spanning over several decades.
- The inclusion of diverse AI methods, notably machine learning and deep learning models, enhances the study's depth and breadth.
- Identification and discussion of current limitations and challenges offer valuable insights for future research directions.
- The use of robust tools such as ROBINS-I for bias assessment strengthens the validity of the review findings.
- The geographically diverse dataset of studies underscores the global research interest and potential applicability.

Weaknesses of the Study

- The review relies solely on two databases, PubMed and Scopus, which may omit relevant studies indexed elsewhere.
- The inclusion of only retrospective studies limits the strength of evidence regarding AI diagnostic performance.
- Several studies have small sample sizes and single-center datasets, which affect generalizability.
- The absence of a meta-analysis limits quantitative synthesis of AI model performance metrics.
- The discussion on clinical implementation and regulatory guidelines remains somewhat superficial and could be expanded.
- Limited critical appraisal of the heterogeneity among included studies, particularly regarding differences in datasets, models, and assessment metrics.
- The manuscript could benefit from clearer, more structured presentation of tables and figures.

Reviewer Comments

- The title clearly indicates the manuscript's focus but may benefit from a slight refinement to emphasize its systematic review nature, e.g., "A Systematic Review of Artificial Intelligence in Diagnosing Oral and Maxillofacial Cysts."

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- The abstract effectively summarizes key points but could explicitly mention the main findings regarding AI accuracy and limitations for clarity.
- The introduction provides a relevant background but would benefit from explicitly stating specific research questions or hypotheses guiding the review.
- The Methods section thoroughly describes search strategies but should clarify inclusion/exclusion criteria with greater specificity.
- The selection process, including the number of articles at each stage and reasons for exclusion, is well presented with a flowchart; however, more detail on how discrepancies were handled would strengthen transparency.
- The Results section presents the data comprehensively but would be improved by including summary tables consolidating AI models, datasets, and performance metrics.
- The discussion appropriately covers current limitations but should also explore ethical considerations, patient safety, and cost implications of AI implementation.
- The conclusion accurately summarizes the findings but should include clearer guidance for clinicians and policymakers regarding immediate or near-term AI integration.
- Ethical approval was not required due to the nature of the review, which is appropriate; however, clarity on whether any included studies had ethical approval should be explicitly stated.
- The language is generally clear; minor typographical/grammatical issues are present and should be corrected in revision.
- Figures and tables are informative but could be reformatted for clarity and consistency; references are comprehensive and well cited.