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PEER-REVIEW REPORT

Name of journal: *World Journal of Gastrointestinal Surgery*

Manuscript NO: 107977

Title: Prediction of Parastomal Hernia in Patients Undergoing Preventive Ostomy After Rectal Cancer Resection Using Machine Learning

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03123424
Position: Peer Reviewer
Academic degree and professional title: MD, Professor
Reviewer's Country/Territory: China
Author's Country/Territory: China

Manuscript submission date: 2025-04-01

Reviewer chosen by: Jia-Lin Zhang

Reviewer accepted review: 2025-04-07 12:17

Reviewer performed review: 2025-04-18 01:53

Review time: 10 Days and 13 Hours

Content to be reviewed	Does the manuscript's content fall within the scope of the journal? **Yes** Is there any Key Word that is not included in the manuscript title? **No** Do authors' affiliations correspond to the content of the manuscript? **Yes** Does the Abstract contain the contents of each part of the manuscript (IMRaD)? **Yes** Are the Key Words complete? **Yes**

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	Is the content of the Introduction adequate? **Yes** Is the content of the Materials and Methods complete? **Yes** Is the description of the experiments clear and complete? **Yes** Are the experimental data presented in the manuscript's biostatistics content reliable? **Yes** Are the experimental data of the Results true and reliable? **Yes** Are the quality and resolution of the images up to standard? **Not Applicable** Do the selection and design of the figures and tables follow the principles of necessity and clarity? **Yes** Is there any duplication between various parts of the manuscript and between the main text and the content presented in the figures and tables? **No** Are the figures and tables numbered consecutively in the order in which they appear in the manuscript? **Yes** Is the content of the Discussion reasonable? **Yes** Is the Conclusion reasonable? **Yes** Are all references necessary and reasonable? **Yes** Do authors omit important references? **No** Are all references related to the topic of the manuscript? **Yes** Do authors only cite their own earlier publications? **No** Is the manuscript's text correct, concise, and clear? **Yes** Will the manuscript's content be of interest to readers? **Yes** Are additional experiments needed for the study? **Yes** Does the research scope comply with ethics? **Yes**

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Scientific quality	Grade B (Very good)
Novelty of this manuscript	Grade B (Very Good)
Creativity or innovation of this manuscript	Grade B (Very Good)
Scientific significance of the conclusion in this manuscript	Grade B (Very Good)
Language quality	Grade B (Very good)
Does this manuscript describe a study of the existing knowledge system?	No
Does this manuscript report a revolutionary innovation?	No
Does this manuscript report an unconventional innovation?	No
Conclusion	Minor revision
Re-review	Yes
Peer-reviewer statements	Peer-Review: Anonymous
	Conflicts-of-Interest: No

SPECIFIC COMMENTS TO AUTHORS

The manuscript presents a timely and relevant study that explores the application of machine learning algorithms in predicting the occurrence of parastomal hernia (PSH) in patients who have undergone preventive ostomy following rectal cancer resection. The authors performed a retrospective analysis of clinical data from 579 patients, utilizing various machine learning models, particularly focusing on the random forest (RF) model, which demonstrated promising predictive capabilities. Below are my detailed comments and suggestions for improvement. Strengths: Relevance and Importance: The topic is highly pertinent given the rising incidence of rectal cancer and the complications

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associated with preventive ostomy. The study addresses a significant clinical challenge, and the potential application of machine learning in this area is innovative. Methodological Rigor: The authors employed a comprehensive dataset and robust statistical methods, including the use of SHAP analysis for feature importance. This enhances the credibility of the findings and provides insights into the factors influencing PSH. Clinical Utility: The development of an online predictive tool based on the RF model is a noteworthy contribution. This tool could aid clinicians in early identification of high-risk patients, potentially improving postoperative management and patient outcomes. Areas for Improvement: Clarity and Structure: While the manuscript is generally well-structured, some sections could benefit from clearer headings and transitions. For example, the results section could explicitly delineate between different machine learning models and their respective performances, perhaps using subheadings for each model. Discussion of Limitations: The authors mention the limitations of a single-center study and a relatively small sample size but do not elaborate on how these factors might affect the generalizability of the results. A more thorough discussion about potential biases, the impact of demographic differences, and the need for multicenter studies would strengthen the manuscript. Interpretation of Results: While the results are promising, the authors should be cautious about overinterpreting the performance metrics, especially the specificity and positive predictive value (PPV) of the RF model. A more nuanced discussion on the implications of these metrics in clinical practice would be beneficial. Further Validation: The study would greatly benefit from a plan for further validation of the predictive model in larger, diverse cohorts. This could be addressed in a future work section, outlining how the authors propose to confirm the findings in different clinical settings. Minor Suggestions: Ensure that all abbreviations are defined upon their first use in the text to enhance clarity for readers who may not be familiar with them. Consider including a dedicated section on future research directions that

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could stem from this study, such as exploring additional machine learning techniques or integrating patient-reported outcomes into the predictive model. In conclusion, this manuscript presents a significant advancement in the prediction of parastomal hernia using machine learning techniques. With some revisions to enhance clarity and address the areas for improvement noted above, this study could make a valuable contribution to the field and offer practical tools for clinicians managing patients post-rectal cancer surgery. I look forward to seeing the authors' revisions and the potential impact of their work on clinical practices.

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RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Gastrointestinal Surgery*

Manuscript NO: 107977

Title: Prediction of Parastomal Hernia in Patients Undergoing Preventive Ostomy After Rectal Cancer Resection Using Machine Learning

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

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Reviewer's code: 03123424
Position: Peer Reviewer
Academic degree and professional title: MD, Professor
Reviewer's Country/Territory: China
Author's Country/Territory: China

Manuscript submission date: 2025-04-01

Reviewer chosen by: Xin-Liang Qu

Reviewer accepted review: 2025-05-19 12:57

Reviewer performed review: 2025-05-19 13:11

Review time: 1 Hour

Content to be reviewed	Does the manuscript's content fall within the scope of the journal? **Yes** Is there any Key Word that is not included in the manuscript title? **No** Do authors' affiliations correspond to the content of the manuscript? **Yes** Does the Abstract contain the contents of each part of the manuscript (IMRaD)? **Yes** Are the Key Words complete? **Yes**

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Language quality	Grade B (Very good)
Does this manuscript describe a study of the existing knowledge system?	Yes
Does this manuscript report a revolutionary innovation?	Yes
Does this manuscript report an unconventional innovation?	Yes
Conclusion	Accept
Peer-reviewer statements	Peer-Review: Anonymous
	Conflicts-of-Interest: No

SPECIFIC COMMENTS TO AUTHORS

The manuscript presents a compelling study on utilizing machine learning algorithms to predict parastomal hernia (PSH) in patients undergoing preventive ostomy following rectal cancer resection. The research is timely and relevant, given the clinical challenges associated with PSH and its impact on patient quality of life. Clarity and Structure: The authors have effectively addressed the reviewer's feedback regarding the structure of the Results section. The introduction of clear subheadings enhances the logical flow and allows readers to easily navigate through the different machine learning models and their performances. The inclusion of performance metrics for all five models in Table 2 further clarifies the comparative strengths and limitations of each approach. Discussion of Limitations: The revised manuscript now includes a more thorough discussion of the

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limitations, particularly the implications of the single-center design and the relatively small sample size. By elaborating on potential biases and the need for multicenter validation, the authors have strengthened the manuscript's credibility and acknowledged the challenges in generalizing the findings. Further Validation: The authors have made commendable progress by initiating a prospective multicenter study to validate their predictive model. This proactive approach not only addresses the reviewer's concern but also demonstrates their commitment to enhancing the robustness of their findings. The mention of this ongoing work in the "Future Research Directions" section adds valuable context for readers. Abbreviation Clarity: The authors have ensured that all abbreviations are defined upon their first use, improving the manuscript's accessibility for a broader audience. This attention to detail is crucial for enhancing clarity, particularly for readers who may be unfamiliar with the terminology. Future Research Directions: The addition of a dedicated subsection on future research directions is a positive enhancement. The authors outline potential extensions of their work, such as exploring additional machine learning techniques and integrating patient-reported outcomes. This forward-looking perspective enriches the manuscript and suggests avenues for future investigation. Overall, the revisions have significantly improved the manuscript's clarity, depth, and applicability. The study's findings, particularly the efficacy of the random forest model in predicting PSH, hold substantial promise for clinical decision-making and patient management. The development of an online predictive platform further underscores the practical implications of this research. I recommend the manuscript for publication, as it contributes valuable insights to the field of surgical oncology and machine learning applications in healthcare.