The entire comments made by the Reviewer #1

Comment 1
#1. “importantly, >50% of these LNs are nonmetastatic 3” >> Ref-3 was published in 2003 so please provide more modern reference[s] to convince the readers the accuracy of LN evaluation by modern MRI was still not satisfactory.

Author reply:
Thank you for your comment. We have carefully reviewed the references and agree that some of them might be outdated. We apologize for this oversight and assure you that we will make the necessary revisions to include more recent and relevant literature in our revised manuscript. The recent and relevant literature are as follows:

Comment 2
#2. “diagnostic insufficiency and overdiagnosis due to the relatively high proportion of non metastatic nodes 5” >> Please clarify, “3/(3+15)=16.7%” had non-metastatic nodes when LN was evaluated as metastatic by MR as reported in reference-5, Was 16.7% high?

Author reply:
Thank you for your valuable suggestion. We have revised the original statement from '...there is a risk of diagnostic insufficiency and overdiagnosis due to the relatively high proportion of non-metastatic nodes...’ to a more concise version: 'The revised statement is 'there is a risk of diagnostic insufficiency and overdiagnosis'.

Comment 3:
#3. “A meta analysis…diagnosis 6” >> Ref-6 was published in 2012 so please provide more modern reference[s] to convince the readers the accuracy of LN evaluation by
modern MRI was still not satisfactory.

Author reply:

Thank you for your comment. We have carefully reviewed the references and acknowledge some may be outdated. We apologize for this oversight and have taken steps to rectify it. Our manuscript will be updated with more recent and relevant literature to ensure its accuracy and relevance. The following are the updated references:


Additionally, we have updated our content to include a meta-analysis that shows a sensitivity of approximately 73% and specificity of approximately 74% for MRI in diagnosing LNM.

Comment 4

#4. “Evaluating LNs… is less than 15%” >> Ref-3 was published in 2003 whereas ref-7 in 2008 so please provide more modern reference[s] to convince the readers the accuracy of LN evaluation by modern MRI was still not satisfactory.

Author reply:

Thank you for your valuable comment. We have carefully reviewed the references and agree that some of them might be outdated. We apologize for this oversight and assure you that we will make the necessary revisions to include more recent and relevant literature in our revised manuscript. The recent and relevant literature as bellowing:


Comment 5

#5. Recent studies indicate that radiomics models can predict LNM using tumor information 9-12 However, they only confirm the presence of LNM and do not provide precise details on quantity or location” >> suggest to comment on other studies published in 2023 [pubmed PMID 38105891, 38074652, 37909021, 36460837, 36686763] and relevant recent review papers such as “World J Gastroenterol 2023 May 21;29(19):2888-2904” or “Explor Target Antitumor Ther. 2023;4(3):406-421”

Author reply:

Thank you for your valuable comment. The articles (PMID: 38105891, 38074652, 37909021, 36460837, 36686763) focus on utilizing rectal cancer tumor information to extract omics features and establish models for predicting lymph node metastasis. Notably, PMID: 36686763 includes peritumoral features, yet none of these studies incorporate direct information about the lymph nodes themselves. This limitation means that while they confirm the presence of lymph node metastasis, they fail to specify the location or quantity of the affected lymph nodes.

Furthermore, our comprehensive literature review, which includes references from World J Gastroenterol 2023 May 21; 29(19): 2888–2904 (doi: https://doi.org/10.1101/2022.05.02.22274247 and PMID: 31949400), highlights the importance of including lymph node information in such research. This approach contrasts with the tumor-centric focus found in other referenced studies. One study from our review (doi: https://doi.org/10.1101/2022.05.02.22274247) manually separated primary tumors and lymph nodes, extracted omics features, and created models to assess lymph node metastasis. However, it had a limited sample size of 69 lymph node samples and reported AUC values of 0.846 and 0.733 for training and test cohorts, respectively. In comparison, our study had a sample size three times larger, yielding higher AUC values of 0.890 and 0.860 in the corresponding cohorts. We also evaluated the predictive effectiveness of lymph node omics features alongside routine MRI features using a nomogram.

The study PMID: 31949400 manually delineated lymph nodes post-neoadjuvant therapy to predict lymph node metastasis. Conversely, our study focuses on predicting lymph node metastasis in rectal cancer cases without neoadjuvant treatment. While their study aggregated features from all lymph nodes, we focused on individual lymph node features. Therefore, their research merely confirms the presence of lymph node metastasis. In summary, current omics research on lymph node metastasis in rectal
cancer primarily focuses on predicting metastasis using tumor information, with limited studies investigating the prediction based on lymph node information itself.

Comment 6
#6. “A total of 270 LNs (158 LNM and 112 metastatic)” >> or “A total of 270 LNs (158 nonmetastatic and 112 metastatic)”?

Author reply:

Thank you for your comment. The previous text in this section contained errors and has now been corrected. The corrected content is as follows: "A total of 270 lymph nodes (158 nonmetastatic and 112 metastatic)."

Comment 7
#7. Fig 1 legend “with a short diameter of ≥ 5 mm” & text “the analysis excluded 9 LNs with a diameter greater than 1 cm” >> suggest to modify Fig 1 legend as “with a short diameter of within 5 – 10 mm”

Author reply:

Thank you for your comment. We have made modifications to Fig 1.
Comment 8

#8. lack of external validation should be addressed in the study limitation [for example, see Ann Intern Med. 2015;162:55-63]

Author reply:

Thank you for your valuable suggestions. We have already added content to the insufficient part of the article: Lack of external validation is a limitation. Seeking suitable datasets and conducting multicenter studies would address this and ensure data integrity for evaluating the model’s performance.