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OPEN PEER REVIEW

Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Scan Reports for Small Bowel Diseases: A Preliminary Study

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1 Original submission

5 comments · 10 Nov 2021 – 20 Nov 2021

Referee 1 Reviewer

MAJOR REVISION 10 Nov 2021

Thanks to the authors for choosing our journal for their submission.
It can be said that this manuscript is relatively appropriate in terms of the structure of scientific writing, but there are many vague points, the most important of which are:
1. Any tool or method developed by researchers should be evaluated for indicators of validity and reliability. Please explain these issues.
2. What was the design of your study?
3. What were the inclusion and exclusion criteria for patients?
4. How were patients assigned to the two groups (randomly or nonrandomly)?
5. What were the criteria for selecting the research team? Will the results of the evaluation change if the team members change?
6. Were the results evaluated in a blinded manner?
7. A gold standard method is needed to measure accuracy. What method was used as the gold standard?

Referee 2 Reviewer

MINOR REVISION 16 Nov 2021

The manuscript entitled "Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Reports for Small Bowel Diseases: a preliminary study" is a well-organized and well-conducted survey that develops a structured report (SR) of SBDs based on MSCT and evaluates its superiority over free text reporting (FTR) in radiologists with different levels of seniority.
Minor revision is needed as follows:
1. In the result section, the last line on page 8 seems to refer to the experienced group, which should be specified in the sentence.
2. In the discussion section on page 13, paragraph 1 is inconsistent with table 6 and needs to be revised. ("we also analyzed diagnostic accuracy of the FTR and SR methods for main reporting elements, and demonstrated that the accuracy for intestinal wall, intestinal periphery, blood vessel, bone, and other abdominal organ diseases in the inexperienced group was improved by using the SR method"?? (The p-value for abdominal wall is not significant in this group based on table 6.)) ….. "Moreover, there was a statistically significant difference in the sensitivity between the two groups (Table 4)" (What is the meaning of this sentence? Please clarify it.)

Referee 3 Reviewer

MINOR REVISION 18 Nov 2021

Thank you for submitting your manuscript to the Iranian Journal of Radiology.
The main goal of this study was to assess the role of structured reporting (SR) in improving the accuracy of small bowel disease detection in CT enterography compared to free text reporting (FTR). This study was conducted on 120 patients diagnosed with small bowel disease. Using structured reporting templates resulted in better detection of intestinal and extra-intestinal abnormalities, particularly by inexperienced radiologists.
Major strengths of this article include:
1. The manuscript is well-written in English.
2. Since detection of small bowel disease is challenging in clinical practice, reporting templates provided by

the authors can aid in the characterization of the abnormalities and help avoid misdiagnosis.
Major drawbacks of this article include:
1. The radiologists used the SR templates after reporting the CTE of sixty patients, which could result in a bias because of the experience gained in detecting abnormalities during free text reporting, especially by inexperienced radiologists. It would have been better to use SR and FTR simultaneously.
2. The selection of case and control groups is not well discussed in the manuscript.
3. The last paragraph in the “report accuracy” section is unclear and must be written again.
4. The results of the study are repeated in the discussion, making it a bit long and boring.

Associate Editor MAJOR REVISION 19 Nov 2021

The manuscript was studied by three expert reviewers and by me. I agree with the reviewers' comments that the manuscript could be reconsidered following revisions by the authors.

Editor-in-Chief MAJOR REVISION 20 Nov 2021

Dear authors,
Your article needs Major Revision.
Regards

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editor,

We would like to extend our most sincere gratitude to the reviewers' comments on our manuscript entitled "**Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Reports for Small Bowel Diseases: a preliminary study**". Those comments are all valuable and very helpful for revising and improving our paper, as well as the essential guiding significance to our researches. We have revised the comments extensively and have made the corrections in order to meet with approval. The leading corrections in the paper and the response to the reviewers' comments are as follows.

We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to reviewer’s comments

Reviewer #1

The manuscript entitled “Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Reports for Small Bowel Diseases: a preliminary study’’ is a well- organized and well-conducted survey and develop a structured report (SR) of SBDs based on MSCT, and evaluate its superiority over free text reporting (FTR) in radiologists with different levels of seniority.

Minor revision is needed as follow:

Comment 1: In result section, last line in page 8 seems to refer to experienced group and should define in sentence

Response: Thanks for your valuable comment. It has been defined in Methods section in last line in page 8 line 122 to page 9 line 123-125.

Six radiologists were selected and divided into an inexperienced group (group A, radiologists engaged in imaging diagnosis less than 5 years, n = 3, A1, A2, and A3) and an experienced group (group B, radiologists engaged in imaging diagnosis for more than 5 years, n = 3, B1, B2, and B3).

Comment 2: In discussion section page 13 paragraph 1 is inconsistent with table 6 and need to be revised.

(We also analyzed diagnostic accuracy of the FTR and SR methods for main reporting elements, and demonstrated that the accuracy for intestinal wall, intestinal periphery, blood vessel, bone, and other abdominal organ diseases in the inexperienced group was improved by using the SR method?? (p value of abdominal wall is not significant in this group base on table 6)) ……. Moreover, there was a statistically significant difference in the sensitivity between the two groups (Table 4) (what is the meaning of this sentence please clarify it)

Response: Thanks for your valuable comment. As you mentioned, p value of abdominal wall is not significant in inexperienced group base on table 6, but the number of positive diagnostic accuracy were increased. Therefore, we conclude that statement. Considering your comment, we have deleted “intestinal wall” in this

sentence.

For the sentence “Moreover, there was a statistically significant difference in the sensitivity between the two groups (Table 4)”, there was mistakes. The table 4 should be Table 6, we have revised this section, as follows:

We also analyzed the diagnostic accuracy of the FTR and SR methods for main reporting elements, and demonstrated that the accuracy for intestinal periphery, blood vessel, bone, and other abdominal organ diseases in the inexperienced group was improved by using the SR method. Similarly, the diagnostic accuracy for all of the aforementioned diseases was increased numerically in the experienced group, especially the diagnostic accuracy for bone showed statistically significant between FTR and SR methods (Table 6).

Thank you again for your valuable comments.

Reviewer #2

Thank you for submission of your manuscript to the Iranian journal of radiology.

The main goal of this study was to assess the role of structured reporting (SR) in improving the accuracy of small bowel disease detection in CT enterography compared to free text reporting (FTR). This study was conducted on 120 patients diagnosed with small bowel disease. Using structured reporting templates resulted in better detection of intestinal and extra-intestinal abnormalities, particularly in inexperienced radiologists.

Major strengths of this article include:

1. The manuscript is well-written in English.

2. Since detection of small bowel disease is challenging in clinical practice, reporting templates provided by the authors can aid in the characterization of the abnormalities and avoid misdiagnosis.

Response: Thanks for your valuable comments.

Major drawbacks of this article include:

Comment 1: The radiologists used the SR templates after reporting the CTE of sixty patients, which could result in a bias because of learning experience in detecting abnormalities during free text reporting, especially in inexperienced radiologists. It was better to use SR and FTR simultaneously.

Response: Thanks for your valuable comments.

The purpose of this study is to compare the application of the two reports (free text reports and structured reports), and to further demonstrate the convenience and practicability of structured reports through result evaluation by the doctors with different years of experience after use. There might be some bias in the selection of doctors and patients, and some effort were made to reduce such bias. For example, the doctors included in this study were selected by having the same or similar working years, and they all have passed the training. In terms of cases selection, the disease types matching of the two reports (free text reports and structured reports) is basically similar.

It is not the radiologists read 60 CT scans using FTR first and then used SR for 60 CT scans. In fact, we conducted two groups of experiments, including 60 cases in the free

reporting group and 60 cases in the structured reporting group. The radiologists read 60 CT scans using FTR first, and then another 60 CT scans using SR were performed.

Comment 2: The selection of case and control groups is not well discussed in the manuscript.

Response: Thanks for your valuable comments. We have added a paragraph to introduce the included cases, as follows:

3.1 Patients

Patients who received MSCT enterography in our hospital was included in this study with the inclusion criteria as follows: 1) patients who were pathologically confirmed or clinically diagnosed as small intestinal tumors, inflammation, mesenteric vascular lesions; 2) patients who had complete clinical and imaging data; 3) patients with age more than 18 years. A total of 120 cases were included, and they were randomly assigned into two groups (FTR and SR groups).

Comment 3: The last paragraph in the “report accuracy” section is unclear and must be written again.

Response: Thanks for your valuable comments. The results in the “report accuracy” section has been re-written into three subsection, as follows:

4.3 Report accuracy of FTRs between experienced and in experienced groups

The report accuracy (including sensitivity, specificity and misdiagnosis rate, and total misdiagnosis rate) for radiologists by using FTRs were evaluated. As shown in Table 4, the three radiologists in the same group showed no significant differences on

sensitivity, specificity and misdiagnosis rate for all disease (all $P > 0.05$). Then, the report accuracy for radiologists between inexperienced and experienced groups were compared. The radiologists in experienced group showed a lower total missed diagnosis rate than inexperienced group ($P < 0.05$). Additionally, the radiologists in experienced group showed a higher sensitivity for all the diseases ($P < 0.05$), and a higher specificity for blood vessel and other abdominal organ diseases ($P < 0.05$) than inexperienced group. Moreover, the experienced group showed low misdiagnosis rate for all the diseases ($P < 0.05$), except for bone disease ($P = 0.161$).

4.4 Report accuracy of SRs between experienced and in experienced groups

Similarly, the report accuracy (including sensitivity, specificity and misdiagnosis rate, and total misdiagnosis rate) for radiologists by using SRs were evaluated. As shown in Table 5, the three radiologists in the same group showed no significant differences on sensitivity, specificity and misdiagnosis rate for all disease (all $P > 0.05$). When compared with the inexperienced group, the experienced group showed a lower misdiagnosis rate only for intestinal wall disease ($P < 0.05$), and a higher sensitivity for intestinal wall ($P < 0.05$) and intestinal periphery disease ($P = 0.024$). There was no significant difference in terms of report accuracy for blood vessel, bone, and other abdominal organ diseases between the inexperienced and experienced groups.

4.5 Sensitivity comparison of FTRs and SRs

The sensitivity by using FTRs and SRs were compared (Table 6). For the inexperienced group, the sensitivity for intestinal periphery, blood vessel, bone, and other abdominal organs diseases were significantly improved after using SRs ($P <$

0.05). In contrast, no significant difference was found for the sensitivity in terms of intestinal wall disease by using FTRs and SRs ($P > 0.05$). Moreover, there was no significant difference in the sensitivity in terms of intestinal wall, intestinal periphery, blood vessel, bone, and other abdominal organs diseases between FTRs and SRs. Notably, the positive accuracy for bone lesions was improved in the experienced group by using SRs ($P < 0.05$) (Table 6).

Comment 4: The results of the study are repeated in the discussion, making it a bit long and boring.

Response: Thanks for your valuable comments. Revisions have been made in the Discussion section to reduce the descriptions for result.

Thank you again for your valuable comments.

Reviewer #3

Thanks to the authors for choosing our journal for their submission

It can be said that this manuscript is relatively appropriate in terms of the structure of scientific writing; but there are many vague points, the most important of which are:

Comment 1: Any tool or method developed by researchers; it should be evaluated for indicators of validity and reliability. Please explain about these issues.

Response: Thanks for your valuable comments. We have explain the following issues in detail.

Comment 2: What was the design of your study?

Response: Thanks for your valuable comments.

The design of this study is to compare the application of the two reports (free text reports and structured reports), and to further demonstrate the convenience and practicability of structured reports through result evaluation by the doctors with different years of experience after use.

We have added these descriptions in the Objectives section.

Comment 3: What were inclusion and exclusion criteria of patients?

Response: Thanks for your valuable comments. We have added a paragraph to introduce the included cases, as follows:

3.1 Patients

Patients who received MSCT enterography in our hospital was included in this study with the inclusion criteria as follows: 1) patients who were pathologically confirmed or clinically diagnosed as small intestinal tumors, inflammation, mesenteric vascular lesions; 2) patients who had complete clinical and imaging data; 3) patients with age more than 18 years. A total of 120 cases were included, and they were randomly assigned into two groups (FTR and SR groups).

Comment 4: How were patients (random / non-random) assigned to the two groups?

Response: Thanks for your valuable comments. The included patients were randomly assigned into two groups.

Comment 5: What were the criteria for selecting the researcher team? Will the results of the evaluation change with the change of team members?

Response: Thanks for your valuable comments. The structured report (SR) in this study was developed for small bowel diseases, and therefore the SR team composed of experienced physicians (at least associate chief physician) from the departments of radiology, gastroenterology, gastrointestinal surgery and oncology to ensure a comprehensive evaluation. The satisfaction was evaluated based on the scoring standards in Table 2. The accuracy was evaluated based on surgical pathology, clinical data and follow-up results. The changes of SR team members will not change the results evaluation.

Comment 6: Was the evaluation of the results done blindly?

Response: Thanks for your valuable comments. Yes, the evaluation of the results done blindly. CT scans was reviewed by the radiologists who were blind to the clinical data and pathological results of all cases. The reports of the radiologists were evaluated by SR team who were blind to the study design and the information of radiologists.

Comment 7: The gold standard method is needed to measure accuracy, what method was used as the gold standard?

Response: Thanks for your valuable comments. The accuracy was judged by surgical pathology for patients who received surgery, while the accuracy was judged by

clinical data and follow-up results for patients who did not receive surgery.

Thank you again for your valuable comments.

2 Revision 1

1 comment · 29 Jan 2022

Editor-in-Chief

MINOR REVISION 29 Jan 2022

Dear authors,
Your article needs Minor Revision.
Regards

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editor,

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We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to reviewer’s comments

Reviewer #1

Thank you for submission of your manuscript to the Iranian journal of radiology. All the comments were noticed, and the manuscript has been well revised based on the reviewers’ comments.

Response: Thanks for your warm work earnestly.

Reviewer #2

Comment 1: Thanks from authors for their explanations and revisions. Currently, it can be said that this draft is relatively appropriate; but, one before comment about gold standard method also remain challenging and it must be more clarified. Only one method can be chosen as the gold standard; which here, it is logical to consider the pathology method. As a result, patients who did not undergo surgery should be excluded from the accuracy evaluation.

Response: Thanks for your valuable comment.

In this study, surgical pathology was used as gold standard for patients who had neoplastic lesions or other lesions with surgical indications. For patients who had non-neoplastic lesions or other lesions without surgical indications, studies had demonstrated that clinical data, biochemical indicators and imaging data can be used as diagnostic standard. For example, CT is usually the diagnostic standard for vascular lesions. Inflammatory lesions are usually self-healing lesions without surgical indications and are usually diagnosed by clinical data (medical history, biochemical indicators, CT images, diagnostic treatment, and follow-up). Therefore, clinical data and follow-up results were used as gold standard for patients who had no surgical indications in this study. Considering your comments, we have discussed this issue as a limitation of our manuscript, as follows:

We included patients who had no surgical indications, and no surgical pathology was used as gold standard for these patients, although studies had demonstrated that clinical data, biochemical indicators and imaging data can be used as diagnostic

standard [29-32]. To ensure more reliable accuracy evaluation, these patients should be excluded.

[29] Kim J, Lee Y, Yoon J H, et al. Non-strangulated adhesive small bowel obstruction: CT findings predicting outcome of conservative treatment. European Radiology, 2021, 31(3): 1597-1607.

[30] Wang Y, Zhao R, Xia L, et al. Predictive risk factors of intestinal necrosis in patients with mesenteric venous thrombosis: retrospective study from a single center. Canadian Journal of Gastroenterology and Hepatology, 2019;2019:8906803.

[31] Oliva I B, Davarpanah A H, Rybicki F J, et al. ACR Appropriateness Criteria® imaging of mesenteric ischemia. Abdominal imaging, 2013, 38(4): 714-719.

[32] Xiao J, Li Q D. Multi-slice spiral CT evaluation of chronic radiation colitis and rectitis. Experimental and therapeutic medicine, 2020, 20(4): 3033-3040.

Associate Editor

Comments: The revised manuscript is well modified and corrected by the authors based on the reviewers' comments. There is still a concern from one of the reviewers which needs to be addressed by the authors.

Response: Thanks for your warm work earnestly. We have addressed the concern from reviewer#2.

3 Revision 2

0 comments

No public comments in this round.

4

Revision 3

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

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We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s comments

1. Please insert an ethical code link address.

Response: We have inserted in the manuscript as follows:

This study was performed in accordance with Declaration of Helsinki (http://www.cirp.org/library/ethics/helsinki/) and was approved by the ethics committee and animal management committee of our organization.

2. Regarding the importance of “conflict of interest” clarification, corresponding author should fill the “ICMJ form” form and upload in the submission process. (The form exists in “conflict of interest” section of the site: https://brief.land/iranjradiol/knowledgebase/category/tree.html#conflicts_of_interest.html).

Response: We have uploaded the “ICMJ form” in the online system. Thanks!

As your study supported by the Social Development Fund of Nantong ...; you should mention that as conflict of interest.

Response: We have revised the funding section as follows:

Funding

This work was supported by the Social Development Fund of Nantong (No. MS20219013 and HS2019002), the fifth Round of the “Programme 333” of Jiangsu (No. BRA2020198), the Young Medical Talents Fund of Health Commission of Nantong (No. QA2019008) and Kangda Collage Of Nanjing Medical University Key projects of the Scientific Research and Development Fund (No. KD2021KYFZZD008). The funding body has no role in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript.

3. The references you used are old. Please use up to date relevant references.

Response: Thanks for your warm work earnestly. We have updated the references. Several references are not changed because that they are cited for methods and for

discussing key results.

4 Revision 3

0 comments

No public comments in this round.

5

Revision 4

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

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We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

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Response: We have inserted in the manuscript as follows:

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Response: We have revised the funding section as follows:

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3. The references you used are old. Please use up to date relevant references.

Response: Thanks for your warm work earnestly. We have updated the references. Several references are not changed because that they are cited for methods and for

discussing key results.

5 Revision 4

0 comments

No public comments in this round.

6

Revision 5

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

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We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s comments

EIC Decision:

Dear authors,

If the web address (link) of ethical committee approval is not available, please upload official approval document ethics committee.

Response: We have uploaded an official approval document of ethics committee in the

system. Thanks!

6 Revision 5

1 comment · 3 Apr 2022

Editor-in-Chief

MINOR REVISION 3 Apr 2022

Dear authors,
Your article needs Minor revision.
Regards

7

Revision 6

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

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Dear editor,

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We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s and reviewer’s comments

Reviewer #1

Comment: Unfortunately, the authors did not pay attention to the question that arose about the gold standard method in the second time reviewing, which needs to be applied. Only one method can be chosen as the gold standard; which here, it is logical to consider the pathology method. As a result, patients who did not undergo surgery should be excluded from the accuracy evaluation

Response: Thanks for your valuable comment.

We totally agree with that only pathology method can be chosen as the gold standard. But in our current study, the included patients with small bowel diseases includes neoplastic lesions and non-neoplastic lesions (mesenteric vascular lesions, intestinal necrotic lesions, intestinal obstruction and inflammatory lesions), as shown in Table 1.

(1) Neoplastic lesions and non-neoplastic lesions that requires surgery (including intestinal necrosis, strangulation intestinal obstruction), pathology was obtained by surgery and used as the gold standard.

(2) Non-neoplastic lesions that do not require surgery are based on the diagnostic guidelines of professional radiological societies and the diagnostic criteria proposed by expert consensus.

① The gold standard for diagnosis of mesenteric vascular disease is angiography (DSA), but DSA is invasive, and the American College of Radiology (ACR) recommends CT angiography (CTA) instead of DSA [1]. CTA in the diagnosis of acute and chronic mesenteric ischemia showed a sensitivity of 93% and a specificity of 100%. Therefore, conventional DSA and CTA were used as reference standards for the mesenteric vascular lesions in this study.

② Kim et al. [2] proposed that CT imaging findings combined with clinical data can be used to diagnose patients with non-strangulated intestinal obstruction. Therefore, CT imaging findings combined with clinical data was used as diagnostic criteria for non-strangulated intestinal obstruction in this study.

③ European Cron's and Colitis Organisation (ECCO) proposed that the diagnosis of inflammatory bowel disease (IBD) is not based on a single diagnostic criterion, but on

a comprehensive examination of clinical, biochemical, stool, endoscopy, and CT cross-sectional imaging [3, 4]. Xiao et al. [5] proposed that CT imaging findings combined with the patient's medical history, biochemical indicators and clinical manifestations can be used to diagnose colitis and proctitis. Therefore, endoscopy, CT image, biochemical indicators and clinical manifestations were used for such lesions.

For each lesion, the diagnostic criteria is the same for patients both in FTR group and SR group, this had no influences to the accuracy evaluation.

In the discussion section, we have mentioned that: We included patients who had no surgical indications (including mesenteric vascular disease, non-strangulated intestinal obstruction and inflammatory bowel disease), and no surgical pathology was used as gold standard for these patients, although studies had demonstrated that clinical data, biochemical indicators and imaging data can be used as diagnostic standard. To ensure more reliable accuracy evaluation, these patients should be excluded.

Table 1. The clinical characteristics of patients with small bowel diseases

Diseases type	Free text report group	Structured report group	t/χ^2	P value
Age (years)	55±17	53±13	0.62	0.54
Gender				
Male	39	28		
Female	21	32		
BMI	24.3±3.3	23.7±1.8	2.26	0.25
Underlying Disease	22	25	0.32	0.58
Heart disease	4	6		
Diabetes	7	10		
Hypertension	11	9		
Small bowel diseases				
Intestinal neoplasms	17	20	0.35	0.55
Adenocarcinoma	4	5		
Mesenchymoma	7	6		
Lymphadenoma	2	4		
Lipomyoma	3	4		
Adenoma	1	1		
Vascular diseases	13	8	1.44	0.23
Superior mesenteric artery embolus	4	2		
Superior mesenteric artery dissection	1	0		
Superior mesenteric artery aneurysms	1	1		
Superior mesenteric venous thrombosis	2	1		
Portal vein thrombosis	3	2		
Portal hypertension with collateral circulation	2	2		
Inflammatory bowel disease	17	18	0.04	0.84
Crohn's disease	6	5		
Radiation colitis	0	2		
Eosinophilic enteritis	1	0		
Intestinal specific inflammation	10	11		
Others	5	9	1.29	0.25
Intussusception	1	2		
Mesenteric warp with small bowel obstruction	1	2		
Lumbar clamping with small bowel obstruction	2	2		
Inguinal hernia with small bowel obstruction	1	3		
Negative imaging examination	8	5	0.776	0.38
Total	60	60		

Associate Editor 1

Comment: I agree with the first reviewer's comment that the authors have to address and consider one method as the gold standard which should be pathology based in this study. This has not been responded and considered.

Response: Thanks for your valuable comment.

We totally agree with that only pathology method can be chosen as the gold standard.

But in our current study, the included patients with small bowel diseases includes neoplastic lesions and non-neoplastic lesions (mesenteric vascular lesions, intestinal necrotic lesions, intestinal obstruction and inflammatory lesions), as shown in Table 1.

(1) Neoplastic lesions and non-neoplastic lesions that requires surgery (including intestinal necrosis, strangulation intestinal obstruction), pathology was obtained by surgery and used as the gold standard.

(2) Non-neoplastic lesions that do not require surgery are based on the diagnostic guidelines of professional radiological societies and the diagnostic criteria proposed by expert consensus.

① The gold standard for diagnosis of mesenteric vascular disease is angiography (DSA), but DSA is invasive, and the American College of Radiology (ACR) recommends CT angiography (CTA) instead of DSA [1]. CTA in the diagnosis of acute and chronic mesenteric ischemia showed a sensitivity of 93% and a specificity of 100%. Therefore, conventional DSA and CTA were used as reference standards for the mesenteric vascular lesions in this study.

② Kim et al. [2] proposed that CT imaging findings combined with clinical data can be used to diagnose patients with non-strangulated intestinal obstruction. Therefore, CT imaging findings combined with clinical data was used as diagnostic criteria for non-strangulated intestinal obstruction in this study.

③ European Cron's and Colitis Organisation (ECCO) proposed that the diagnosis of inflammatory bowel disease (IBD) is not based on a single diagnostic criterion, but on a comprehensive examination of clinical, biochemical, stool, endoscopy, and CT

cross-sectional imaging [3, 4]. Xiao et al. [5] proposed that CT imaging findings combined with the patient's medical history, biochemical indicators and clinical manifestations can be used to diagnose colitis and proctitis. Therefore, endoscopy, CT image, biochemical indicators and clinical manifestations were used for such lesions. For each lesion, the diagnostic criteria is the same for patients both in FTR group and SR group, this had no influences to the accuracy evaluation.

Table 1. The clinical characteristics of patients with small bowel diseases

Diseases type	Free text report group	Structured report group	t/χ^2	P value
Age (years)	55±17	53±13	0.62	0.54
Gender				
Male	39	28		
Female	21	32		
BMI	24.3±3.3	23.7±1.8	2.26	0.25
Underlying Disease	22	25	0.32	0.58
Heart disease	4	6		
Diabetes	7	10		
Hypertension	11	9		
Small bowel diseases				
Intestinal neoplasms	17	20	0.35	0.55
Adenocarcinoma	4	5		
Mesenchymoma	7	6		
Lymphadenoma	2	4		
Lipomyoma	3	4		
Adenoma	1	1		
Vascular diseases	13	8	1.44	0.23
Superior mesenteric artery embolus	4	2		
Superior mesenteric artery dissection	1	0		
Superior mesenteric artery aneurysms	1	1		
Superior mesenteric venous thrombosis	2	1		
Portal vein thrombosis	3	2		
Portal hypertension with collateral circulation	2	2		
Inflammatory bowel disease	17	18	0.04	0.84
Crohn's disease	6	5		
Radiation colitis	0	2		
Eosinophilic enteritis	1	0		
Intestinal specific inflammation	10	11		
Others	5	9	1.29	0.25
Intussusception	1	2		
Mesenteric warp with small bowel obstruction	1	2		
Lumbar clamping with small bowel obstruction	2	2		
Inguinal hernia with small bowel obstruction	1	3		
Negative imaging examination	8	5	0.776	0.38
Total	60	60		

References

[1] Expert Panels on Vascular Imaging and Gastrointestinal Imaging:, Ginsburg M, Obara P, Lambert DL, Hanley M, Steigner ML, Camacho MA, Chandra A, Chang KJ, Gage KL, Peterson CM, Ptak T, Verma N, Kim DH, Carucci LR, Dill KE. ACR Appropriateness Criteria® Imaging of Mesenteric Ischemia. J Am Coll Radiol. 2018 Nov;15(11S):S332-S340.

[2] Kim J, Lee Y, Yoon J H, et al. Non-strangulated adhesive small bowel obstruction: CT findings predicting outcome of conservative treatment[J]. European Radiology, 2021, 31(3): 1597-1607.

[3] Panes J, Bouhnik Y, Reinisch W, et al. Imaging techniques for assessment of inflammatory bowel disease: joint ECCO and ESGAR evidence-based consensus guidelines[J]. Journal of Crohn's and Colitis, 2013, 7(7): 556-585.

[4] Maaser C, Sturm A, Vavricka S R, et al. ECCO-ESGAR Guideline for Diagnostic Assessment in IBD Part 1: Initial diagnosis, monitoring of known IBD, detection of complications[J]. Journal of Crohn's and Colitis, 2019, 13(2): 144-164.

[5] Xiao J, Li Q D. Multi-slice spiral CT evaluation of chronic radiation colitis and rectitis[J]. Experimental and therapeutic medicine, 2020, 20(4): 3033-3040.

7 Revision 6

1 comment · 12 Jun 2022

Editor-in-Chief

MINOR REVISION 12 Jun 2022

Dear authors,
Your article needs Minor Revision.
Regards

8

Revision 7

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editor,

We would like to extend our most sincere gratitude to the reviewers' comments on our manuscript entitled "**Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Reports for Small Bowel Diseases: a preliminary study**". Those comments are all valuable and very helpful for revising and improving our paper, as well as the essential guiding significance to our researches. We have revised the comments extensively and have made the corrections in order to meet with approval. The leading corrections in the paper and the response to the reviewers' comments are as follows.

We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s and reviewer’s comments

Reviewer #1

Thanks to the authors for their appropriate explanations.

Currently, this manuscript is acceptable according to methodology view.

Response: Thanks for your warm work earnestly and your recommendation for our paper.

Reviewer #2

This paper is suitable for publication in IJR.

Response: Thanks for your warm work earnestly and your recommendation for our paper.

Associate Editor 1

Required corrections have been done completely and the manuscript can be accepted for publication.

Response: Thanks for your warm work earnestly and thank you for agreeing to accept our paper.

Associate Editor 2:

Comment 1: this sentence: “The satisfaction scores for both the inexperienced (4 vs. 2.6) and the experienced (4.1 vs. 3.2) group ($P < 0.05$) were improved using SRs.” could be written better as: “The satisfaction scores for both the inexperienced and the experienced groups were improved using SRs. (4 vs. 2.6 for inexperienced and 4.1 vs. 3.2 for experienced group; both Ps < 0.05)”

Response: Thanks for your valuable comment. This sentence has been re-written according to your suggestion.

Comment 2: this sentence seems incomplete [while it is complete based on writing style]: “The six radiologists who were blind to the clinical data and pathological results of all cases”. [The authors could delete who]

Response: Thanks for your valuable comment. The word “who” has been deleted.

Comment 3: line 152, the part “who received surgery” could be written as “who underwent surgery”

Response: Thanks for your valuable comment. The “received” has been revised as “underwent”.

Comment 4: in sub-titles 4.3 and 4.4, please correct “in experienced” to “inexperienced”.

Response: Thanks for your valuable comment. We are sorry for such mistakes. The “in experienced” has been corrected as “inexperienced”.

Comment 5: line 264, the part “showed statistically significant between” seems incorrect and could be better written as “showed statistical significance between”

Response: Thanks for your valuable comment. The “statistically significant” has been corrected as “statistical significance”.

Comment 6: I cannot see the references in the paper. First reference is 24 in line 269. Please add references in a sequential order in the text.

Response: Thanks for your valuable comment. We checked the paper, and the references are cited normally. In the pdf format for reviewer, part of the references cannot be seen. We have highlighted the references in yellow.

Comment 7: in line 290, is the part “it should be clear” correct? [it should be clarified

?????]

Response: Thanks for your valuable comment. “it should be clear” has been revised as “it should be clarified”.

Comment 8: please add in stst method that normality of continuous data was checked before comparisons.

Response: Thanks for your valuable comment. Normality of continuous data was checked before comparisons using Kolmogorov-Smirnov test. This has been added in the statistical analysis section.

Comment 9: in table 1, the authors mentioned in first row: “Diseases type” while there are no data of disease type in this row.

Response: Thanks for your valuable comment. The “Diseases type” has been revised as “Variables”.

Comment 10: please correct P values as 0.000 to <0.001. [for example, in tables 3 and 4]

Response: Thanks for your valuable comment. It has been revised according to your suggestion.

Comment 11: in table 4, many P values and chi 2 statistics are missing [for example for expert radiologists] why these data are missing [they have been mentioned as /]

Response: Thanks for your valuable comment. In table 4-6, many P value and chi 2

statistics are missing and have been mentioned as "/", because that the data among groups are the same or very close, and the P value is 1 or close to 1 under this condition, indicating there has no statistic differences. Therefore, statistical analysis is not performed there. In addition, several chi 2 statistics are missing but P values are provided, this is because that theoretical frequency of the chi-square test less than 1. In this case, the chi-square test is not applicable and Fisher's exact test is used. Therefore, no chi 2 statistics are obtained.

We have mentioned this in the footnote in tables, as follows:

NA, χ^2 is not available; "/" represent that statistical analysis is not performed there. ("/" means that the data among groups are the same or very close, and the P value is 1 or close to 1 under this condition, indicating there has no statistic differences).

Comment 12: in table 4, there are two columns for X2 and P values at the right side of table. What os difference of these two similar columns? Are the second columns [the last columns] related to comparison of experienced and inexperienced radiologists? Please clarify in table.

Response: Thanks for your valuable comment. In table 4 and 5, there are two columns for X2 and P values at the right side of table. The first columns related to the comparison among the three samples in experienced group, and the second columns related to the comparison between experienced and inexperienced groups.

In this revision, it has been revised as:

Table 4. The accuracy comparison of free text reports for radiologists

Diseases	Inexperienced group (Group A)					Experienced group (Group B)					Group A vs. B	
	A1	A2	A3	χ^2	P	B1	B2	B3	χ^2	P	χ^2	P
Intestinal Wall												
Sensitivity	37/42	35/42	35/42	0.496	0.78	41/42	42/42	42/42	/	/	15.013	<0.001
Specificity	16/18	16/18	15/18	0.318	0.853	18/18	18/18	17/18	/	/	3.375	0.66
misdiagnosis rate	7/60	9/60	10/60	0.629	0.73	1/60	1/60	1/60	/	/	19.84	<0.001

Comment 13: please add full term of abbreviations as footnote in tables.

Response: Thanks for your valuable comment. We have added full term of abbreviations as footnote in tables.

Thank you again for your valuable comments.

8 Revision 7

1 comment · 2 Jul 2022

Editor-in-Chief

MINOR REVISION 2 Jul 2022

Dear authors,
Your article needs Minor Revision.
Regards

9

Revision 8

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editor,

We would like to extend our most sincere gratitude to the reviewers' comments on our manuscript entitled "**Impact of a Structured Report Template on the Quality of Multislice Spiral Computed Tomography Reports for Small Bowel Diseases: a preliminary study**". Those comments are all valuable and very helpful for revising and improving our paper, as well as the essential guiding significance to our researches. We have revised the comments extensively and have made the corrections in order to meet with approval. The leading corrections in the paper and the response to the reviewers' comments are as follows.

We appreciate for Editors/Reviewers' warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s and reviewer’s comments

Reviewer #1

Please write refs in a sequential order to manuscript.

Response: Thanks for your kindest reminding. All the references are cited in a sequential order. Several references (including Ref. 11, 14, 19, 23, 24) are cited more than one time. Therefore, it looks as the references are not cited in a sequential order.

Associate Editor 1

The authors have corrected many points but there are three minor points that should be addressed"

Comment 1: The authors mentioned in response to a question: “In addition, several chi 2 statistics are missing but P values are provided, this is because that theoretical frequency of the chi-square test less than 1. In this case, the chi-square test is not applicable and Fisher’s exact test is used. Therefore, no chi 2 statistics are obtained” and then the authors explained in table footnote: “NA, χ2 is not available” I think, the term NA is confusing in tables 4 and 6 and should be deleted. So we have two option to address this point: I-The authors could replace “χ2” in these tables with “χ2 or Fisher” and then replace NA in tables with their calculated Fisher statistic. II-the authors could delete totally the χ2 and the data of this statistic and mention only the P-values. [because, the P value is important and statistics values are not so important for readers]

Response: Thanks for your valuable comment. In this revision, we have deleted the χ2 statistic in Table 4-6, and only P-values are retained.

Comment 2: in line 267, please correct the sentence as: “……. especially comparison of diagnostic accuracy for bone showed statistical significance between FTR and SR methods …..”

Response: Thanks for your valuable comment. It has been revised as: especially comparison of diagnostic accuracy for bone showed statistical significance between FTR and SR methods.

Comment 3: in footnote of tables 4-6, please correct as: “indicating there is no statistical differences”

Response: Thanks for your valuable comment. The “indicating there has no statistical differences” has been revised as “indicating there is no statistical differences” in footnote of tables 4-6.

Thank you again for your valuable comments.

9 Revision 8

1 comment · 11 Jul 2022

Editor-in-Chief

MINOR REVISION 11 Jul 2022

Dear authors,
Your article needs Minor Revision.
Regards

10

Revision 9

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

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We appreciate for Editors warm work earnestly and hope that the correction will meet with approval.

Once again, thanks for the comments and suggestions.

Sincerely,

A point-by-point response to editor’s comments

Associate Editor 1

the requested corrections have been applied but there is an important point in references. I don’t know why the references do not contain the title of papers. in teh current format, we can see only the authors names, name of journal and date of publication and issue number.

Response: Thanks for your valuable comment. We have revised the References as required. We downloaded and used the Output Style provided on the Journal Website (https://brieflands.com/journals/iranian-journal-of-radiology/knowledgebase/category/tree.html#references.html).

Thank you again for your valuable comments.

10 Revision 9

1 comment · 16 Jul 2022

Editor-in-Chief

ACCEPT 16 Jul 2022

Dear authors,
Your article is acceptable for publication in IJR.
Regards