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OPEN PEER REVIEW

Three-Dimensional Sheath Inked Rapid Acquisition with Refocused Echoes Imaging (SHINKEI) MRI for Delineating the Intraparotid Facial Nerve Branches and Their Anatomical Relationship with Parotid Tumors

Yanwei Jiang, Cheng Sun, Wei Zhou, Lianpin Yu, Weidong Zhang, Chuanting Li

SUBMITTED	REVISED	ACCEPTED	DOI
7 Oct 2020	12 Jun 2021	13 Jun 2021	10.5812/iranjradiol.110109

About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

2 comments · 18 Oct 2020 – 14 Dec 2020

Referee 1 Reviewer

MAJOR REVISION 18 Oct 2020

Hi
Although the researchers in this study tried to conduct high-quality research, unfortunately, this manuscript has problems in terms of scientific writing structure, design, statistical analysis, and presentation of results. The main problem of this study is the inconsistency and incompatibility of the study design with its main purpose. From a methodological point of view, it is a case-control study, but its main purpose is to compare the two MRI methods. The appropriate study design for this purpose is cross-sectional.
Now, if the study is valuable to the journal in terms of subject matter, the authors could be advised to focus only on the patient group, increase the sample size of this group sufficiently, and compare the relevant indicators between the two imaging techniques.

Editor-in-Chief

MAJOR REVISION 14 Dec 2020

Dear authors,
Your article needs Major Revision.
Regards

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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 Editors,

Thank you and the reviewers for your work to our paper 3D SHINKEI MRI in delineating intraparotid facial nerve branches and their anatomical relationships with parotid tumors. We have carefully revised the paper according to the reviewers' opinions. The revised parts are written in red color. The questions are answered in following:

Reviewer 1:

Although the dear researchers of this study tried to carry out a research with high-quality, but unfortunately this manuscript has problems in terms of scientific writing structure, design, statistical analysis and presentation of results.The main problem of this study is the inconsistency and incompatibility of the study design with its main purpose. From the methodological point of view, it is a case-control study, but its main purpose is to compare the two MRI methods. The appropriate study for this purpose is a cross-sectional type. Now, if the study is valuable for the journal in terms of subject matter, it can be suggested that it focus only on the patient group and increase the sample size of this group sufficiently and compare the relevant indicators between the two imaging techniques.

Yes, our paper has some problems in terms of scientific writing structure, design, statistical analysis and presentation of results.

The design of our article first has carried on the volunteers study in comparison image quality of two MR sequences in showing facial nerve branches in the parotid, and then carried on the patient study of two MR sequences in delineating intraparotid facial nerve branches and their anatomical relationships with parotid tumors. The first part of the research is repetitive with the second parts, and has less value. According to your opinion, we carried out again the study of comparison image quality of two MR sequences in showing facial nerve branches in the patients with parotid tumor, and the same results was obtained. The content of research of volunteers was deleted.

We also understand that the sample size of patients is small, especially the patients with parotid malignancy. The design and statistical analysis of our study makes the conclusion of our paper correct.

Reviewer 2:

1: Please write down the name of main branches of facial nerve in background and the first paragraph of discussion sections.

We have made the changes and highlighted them in red.

2: Please also include some axial MR images with marked

facial nerve branches.

The anatomy course of the intraparotid facial nerve is in oblique coronal plan. That's why we chose to make MR scan in coronal position. In the reconstructed axial image, the facial nerve branches present a minor axis and do not shown well like in oblique coronal position.

3:Please include the histology micrograph of basal adenoma along side its MR images.

We have selected pathological microscopic images of pleomorphic adenoma and basal cell adenoma in Figure 1.It is illustrated in red text in the image note.

Sincerely yours

2 Revision 1

4 comments · 6 Feb 2021 – 9 Mar 2021

Referee 2 Reviewer

ACCEPT 6 Feb 2021

Dear associate editor;

The flaws mentioned by the reviewers have been corrected by the authors.

Referee 1 Reviewer

MINOR REVISION 7 Feb 2021

Thank you to the authors for addressing the comments in the manuscript.
However, at present, it needs revision as follows:
1. When the findings of two methods or groups are compared in the abstract and full-text results, the value for each group and the significance level must be added in parentheses.
2. The study design is cross-sectional, and this must be mentioned in the abstract and full-text methods section.
3. These sentences from the methods section must be transferred to the results section:
3.1. (16 male and 20 female; age range from 17–66 y; mean age 43.2 ± 10.6 y).The history of parotid disease ranged from 10 d–12 y; 32 patients had a painless parotid mass; 3 cases had a painful parotid mass; and 1 case with bilateral parotid masses had facial nerve paralysis.
3.2. including 29 cases of benign tumors and 7 cases of malignant tumors.
4. Inclusion and exclusion criteria must be added in the methods section.
5. Statistical analysis: The data in this study were correlated, and McNemar's test or Cochran's Q test must be used rather than the chi-squared ($\chi 2$) test.
6. Results:
6.1. The demographic characteristics of the sample must be presented first.
6.2. The critical values of the tests must be deleted from the text and tables.
7. Table 1: In addition to numbers, percentages must be added in parentheses.
8. In Table 3, how was a number compared between the two methods using the chi-squared test? To use the qualitative test, the variable must be qualitative.

Associate Editor

MINOR REVISION 9 Mar 2021

Dear editor in chief
The article has minor problems, mostly from a methodological point of view.

With best regards

Editor-in-Chief MINOR REVISION 9 Mar 2021

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 Editors,

Thank you and the reviewers for your work to our paper 3D SHINKEI MRI in delineating intraparotid facial nerve branches and their anatomical relationships with parotid tumors. We have carefully revised the paper according to the reviewers' opinions. The revised parts are highlighted in red color. The questions are answered in following:

Reviewer 2:

1. When in abstract and full-text results, finding of two methods or groups were compared, it must be added each group value and significance level in the parenthesis.

We have added each group value and significance level in the parenthesis and highlighted them in red.

2. The design of study is cross-sectional and it must be mentioned in the abstract and full-text method.

We have made the changes in the abstract and full-text method and highlighted them in red.（Patients and Methods，Objectives）

3. These sentences of method must be transferred to the results section:

3.1. (16 male and 20 female; age range from 17–66 y; mean age 43.2 ± 10.6 y).The history of

parotid disease ranged from 10 d–12 y; 32 patients had a painless parotid mass; 3

cases had a painful parotid mass; and 1 case with bilateral parotid masses had facial

nerve paralysis.

3.2. including 29 cases of benign tumors and 7 cases of malignant tumors.

4. This paragraph of method has been transferred to the results section and highlighted them in red.

5. Inclusion and exclusion criteria must be added in the method.

We have added inclusion and exclusion criteria in the method(***3.2 Subjects)***and highlighted them in red.

6. Statistical analysis: the data of this study were corelated and it must be used of McNemar's test or Cochran's Q test rather than chi-squared (χ2) test.

We have carefully analyzed our statistical methods. McNemar′s test (Paired chi-square test) was adopted for our research data. There was a deviation in our presentation. We have made changes in the text and Table 3 and highlighted them in red.

6. Results:

6.1. Firstly must be presented demographic characteristics of

samples.

We have added demographic characteristics of samples in first paragtaphy of the results and highlighted them in red.

6.2. Critical value of tests must be deleted from text and tables.

We have deleted Critical value of tests from text and tables.

7.Table 1: Moreover number must be added percentage in the parenthesis.

We have added percentage in the parenthesis in Table 1 and highlighted them in red.

8. In Table 3, how was a number compared between the two methods using the Chi-square test? To use the qualitative test, the variable must have a qualitative mode.

We have carefully analyzed our statistical methods. McNemar's test was more suitable for our research data. The data were reanalyzed and highlighted in red in Table 3.

Sincerely yours

3 Revision 2

4 comments · 11 Apr 2021 – 2 Jun 2021

Referee 1 Reviewer

ACCEPT 11 Apr 2021

Thanks to the dear authors for applying the comments to the manuscript draft.
Currently, this submission is acceptable in terms of methodology, and it is ready for publication in the IJR.

Associate Editor

ACCEPT 11 Apr 2021

Dear editor in chief,

The article could be accepted.

with best regards

Associate Editor

MINOR REVISION 2 Jun 2021

110109
1-Please make the following correction in line 5: change positional to anatomical. Please do the same in other similar instances, such as line 13 of the abstract.
2-In the title, please change 3D to Three Dimensional.
3-In line 12, please change explore to evaluate.
4-In line 15, 36 should be Thirty six [number at the beginning of a sentence].
5-In line 15, delete were.
6-Please correct: "(t = 10.772, p<0.01) and(t = 11.586, p<0.01) respectively" to: "(t = 10.772, p<0.01 and t = 11.586, p<0.01 respectively)".
7-In line 36, please change accuracy to accurate.
8-Please delete the abbreviations section and define abbreviations at first use in the abstract and main text separately.
9-This part is inappropriate: "The image quality score of displaying condition". It could be written as: "quality score of anatomical display" or: "displaying quality score" or: "score of displaying quality".
10-In line 51, please change: "as part of" to: "during".
11-In line 53, please change: "above" to "corresponding".
12-In line 64, change explored to evaluated.
13-This sentence is unclear. Please clarify: "MRI scanning with the two sequences was cross-section in coronal plane."
14-In lines 77 and 78, please correct: "Patients were consecutively included in this study if they had: (1) A history of parotid tumors, and postoperative pathology confirmed;" to: "Patients were consecutively included in this study if they had: (1) A history of parotid tumors, that were confirmed pathologically;".
15-In line 79, please change undergone to underwent.
16-In line 80, please change checking to evaluation [or assessment].
17-Please correct: "Exclusion criteria were as follows: (1) Severe motion artifacts in MR scanning; (2) Patients with facial nerve diseases such as Bell's facial nerve paralysis; (3) A history of parotid surgery or trauma."
18-Please correct the subtitle in 3.3 to: "Imaging Techniques".
19-In line 66, please change: "3D-T2-FFE" to: "three-dimensional T2-fast field echo (3D-T2-FFE)".

20-In line 87, please change: “three-dimensional T2-fast field echo (3D-T2-FFE)” to: “3D-T2-FFE)”.
21-In line 95, please change the part: “3D-T2-FFE sequence” to: “The scanning parameters of 3D-T2-FFE sequence were as follows”.
22-What is the meaning of “in two sequences of the patients” in line 115? Please clarify.
23-Please correct: “A score of 5 =” to “A score of 5 means”. Please apply a similar change to the other scores in later lines.
24-What is the meaning of “visible artifacts the main”?
25-In line 146, please change position to anatomical. In line 151, please change estimate to assess.
26-The SPSS manufacturer information does not include IBM Inc. Please complete the information.
27-The authors mentioned “Wilcoxon symbolic rank test”. Is it “Wilcoxon signed-rank test”?
28-This sentence seems wrong: “Then, SIR and CNR (normal distribution data) were used for a paired sample t-test”. I think it should be: “SIR and CNR were normally distributed, so we compared them in two sequences by paired sample t-test”.
29-In line 168, please delete from.
30-In subtitle 4.1, please delete “in 36 patients with parotid tumors”.
31-P = 0.000 is wrong. It should be written as: P < 0.001.
32-In lines 183 and 184, please correct: “(2.23 ± 0.68 and 1.02 ± 0.20 respectively, t = 10.772, p <0.001)”.
33-In line 189, please change “were” to “have been shown”.
34-In line 206, to belonging is wrong. It should be to belong. In addition, in this line [206], the authors wrote: “to the above relationship”. This part is better as: “to this category”.
35-In line 209, positional should be anatomical.
36-In lines 212-214, “There were four patients with tumors that matched the above two position relations (type 5 and 6), respectively” could be written as: “each of these two groups [type 5 and 6], included 4 patients”.
37-In lines 219-221, please correct the sentence to: “3D-SHINKEI images of four patients with malignant tumors were characterized by thickening diameter, signal enhancement and non-uniformity of the main trunk and its first-level branches.”
38-In line 99, please correct: “T1-weighted (T1W), T2-weighted (T2W)”.
39-What does the abbreviation TSE stand for? What is MRN?
40-In line 306, “of the facial nerve” could be replaced by: “to the facial nerve”.
41-In line 307, “we found that four cases with type 5 and 6” could be replaced by: “four cases showed involvement type of 5 and 6”.
42-In the figure 2 legend, part (b), “thicker” should be “are thicker”.
43-In the table 1 legend, “athological” should be “pathological”.
44-In table 1, there are 7 malignant tumors recorded, and one of them is bilateral, so we have, in fact, 8 malignant tumors, while the number of malignancies is 7. Please clarify and correct.
45-Please add percentages to table 3 [for example, 34 (91.9%)].

Editor-in-Chief

MINOR REVISION 2 Jun 2021

Dear authors,
Your article needs Minor Revision.
Regards

4

Revision 3

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 Editors:

Thank you for your work to our paper 《3D SHINKEI MRI in delineating intraparotid facial nerve branches and their anatomical relationships with parotid tumors》. We have carefully revised the paper according to the Associate Editor's Comments. The revised parts are highlighted in red color. The questions are answered in following:

Associate Editor 2:

1-please correct in line 5: please change positional to anatomical. And in other similar instances such as line 13 of abstract

We have changed as required and highlighted them in red.

2-in title, please change 3D to Three Dimensional

We have changed as required and highlighted them in red.

3-in line 12, please change explore to evaluate

We have changed as required and highlighted them in red.

4-line 15, 36 should be Thirty six [number at the beginning of sentence]

We have changed as required and highlighted them in red.

5-line 15 delete were

We have deleted as requested.

6-please correct: “(t = 10.772, p<0.01) and(t = 11.586, p<0.01) respectively” to: “(t = 10.772, p<0.01 and t = 11.586, p<0.01 respectively)”

We have changed as required and highlighted them in red.

7-line 36, please change accuracy to accurate.

We have changed as required and highlighted them in red.

8-please delete abbreviation part and define abbreviations for the first time usage in abstract and main text separately.

We have deleted abbreviation part,changed as required and highlighted them in red.

9-this part is inappropriate: “The image quality score of displaying condition”. It could be written as: “quality score of anatomical display” or: “displaying quality score” or: “score of displaying quality”.please delete abbreviation part and define abbreviations for the first time usage in abstract and main text separately.

We have changed as required and highlighted them in red.

10-line 51, please change: “as part of” to: “during”

We have changed as required and highlighted them in red.

11-line 53, please change: “above” to “corresponding”

We have changed as required and highlighted them in red.

12-line 64, explored to evaluated.

We have changed as required and highlighted them in red.

13-this sentence is unclear. please clarify: “MRI scanning with the two sequences was cross-section in coronal plane.”

We have changed as required and highlighted them in red.MRI scan with the two sequences was slices in coronal plane.

14-14-line 77 and 78, please correct: “Patients were consecutively included in this study if they had: (1) A history of parotid tumors, and postoperative pathology confirmed;” to: “Patients were consecutively included in this study if they had: (1) A history of parotid tumors, that were confirmed pathologically;”.

We have changed as required and highlighted them in red.

15-line 79, please change undergone to underwent.

We have changed as required and highlighted them in red.

16-line 80, please change checking to evaluation [or assessment]

We have changed as required and highlighted them in red.

17-please correct: “Exclusion criteria were as follows: (1) Severe motion artifacts in MR scanning; (2) Patients with facial nerve diseases such as Bell’s facial nerve paralysis; (3) A history of parotid surgery or trauma.”

We have changed as required and highlighted them in red.

18-please correct 3.3 subtitle as: “Imaging Techniques”

We have changed as required and highlighted them in red.

19-in line 66, please change: “3D-T2-FFE” to: “three-dimensional T2-fast field echo (3D-T2-FFE)”

We have changed as required and highlighted them in red.

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We have changed as required and highlighted them in red.

21-please correct in line 95, the part: “3D-T2-FFE sequence” to: “The scanning parameters of 3D-T2-FFE sequence were as follows”

We have changed as required and highlighted them in red.

22-what is the meaning of “in two sequences of the patients” in line 115? Please clarify.

We have changed “in two sequences of the patients” to“in two sequences of the MR scan” and highlighted them in red.

23-please correct: “A score of 5 =” to “A score of 5 means”. Please apply similar change to other scores in later lines.

We have changed as required and highlighted them in red.

24-what is the meaning: “visible artifacts the main”?

We have changed it to “visible artifacts in the main branches” and highlighted them in red.

25-in line 146, please change position to anatomical. In line 151, please change estimate to assess

We have changed as required and highlighted them in red.

26-SPSS manufacturer data lacks IBM Inc. please complete the data.

We have changed as required and highlighted them in red.

27-the authors mentioned "Wilcoxon symbolic rank test". Is it "Wilcoxon signed-rank test"?

Yes.We looked up relevant information and found that this is actually a statistical method with a slightly different name.

28-this sentence seems wrong: "Then, SIR and CNR (normal distribution data) were used for a paired sample t-test" I think it should be: "SIR and CNR were normally distributed, so we compared them in two sequences by paired sample t-test"

We have changed as required and highlighted them in red.

29-line 168, please delete from

We have deleted as requested.

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37-in lines 219-221, please correct the sentence as: “3D-SHINKEl images of four patients with malignant tumors were characterized by thickening diameter, signal enhancement and non-uniformity of the main trunk and its first-level branches.”

We have changed as required and highlighted them in red.

38-in line 99, please correct: “T1-weighted (T1W), T2-weighted (T2W)”

We have changed as required and highlighted them in red.

39-what is the abbreviation TSE? What is MRN?

We have annotated the full names where the two words first appear and highlighted them in red.

40-in line 306, “of the facial nerve” could be replaced by: “to the facial nerve”

We have changed as required and highlighted them in red.

41-in line 307, “we found that four cases with type 5 and 6” could be replaced by: “four cases showed involvement type of 5 and 6”

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42-figure 2 legend, part (b), “thicker” should be “are thicker”

We have changed as required and highlighted them in red.

43-in table 1 legend, “athological” should be “pathological”

We have changed as required and highlighted them in red.

44-in table 1, there are 7 malignant tumors recorded in table and one of them are bilateral so we have in fact 8 malignant tumors while the malignancies are 7. Please clarisy and correct.

We enrolled 36 patients in this study. One patient had tumors on both

sides (squamous cell carcinoma on one side and adenolymphoma on the other side).The number of tumors was 37 (30 benign tumors, 7 malignant tumors). We accidentally wrote "adenolymphoma" as "adenocarcinoma". We have made corrections and highlighted them in red.

45-please add percentages to the table 3. [for example, 34 (91.9%)]

We have changed as required and highlighted them in red.

Sincerely yours

4 Revision 3

1 comment · 13 Jun 2021

Editor-in-Chief

ACCEPT 13 Jun 2021

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