Author’s response to reviews

Title: MR imaging features of benign retroperitoneal paragangliomas and schwannomas

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Author’s response to reviews:

Dear Editor,

Re: NURL-D-17-00108

MR imaging features of benign retroperitoneal paragangliomas and schwannomas

We thank the reviewers and editors for their constructive comments and suggestions to improve our manuscript. Please find enclosed a revised manuscript with this covering letter documenting all actions as requested by the reviewers and editors.

Response to reviewer’s and Editorial Board Member comments:

REVIEWER 1
Differential diagnosis between retroperitoneal paragangliomas and schwannomas is difficult. It is of significance because some non-functional retroperitoneal paragangliomas cannot be detected
by blood or urine test. Preoperative differential diagnosis will be important for surgeons and anesthetist. In this study, the authors tried to analyze features on MRI which can differentiate these two tumors. However, there are several issues need to be interpreted in this manuscript.

1) The significance of this study is not clearly expressed. As retroperitoneal paragangliomas can be divided into two types: functional tumors and non-functional tumors. Functional retroperitoneal paragangliomas can be differentiated from schwannomas by clinical features and blood/urine test. Only these non-functional paragangliomas with negative test results needs to be diagnosed using MRI and CT. MRI is also useful for providing information about the relationship between tumor and adjacent tissues.

Response: Thank you for comments and valuable suggestions. We have revised the manuscript in the “Line 71-78”.

2) As all imaging features are based on tumor pathology, is there any relationship between imaging features and pathological findings? What's the possible reason why necrosis and avid enhancement suggest retroperitoneal extra-adrenal paragangliomas?

Response: Thank you for insightful comments. We have revised the manuscript in the “Line 292-298”. Paragangliomas are characteristically highly vascular neoplasms and easy to grow, and may have precarious microcirculation because of high levels of tissue vasoconstrictor substances. These histologic features can cause a spontaneous massive intratumoral hemorrhage and necrotic degeneration. Sahdev A. et al. reported necrotic change was observed in more than 70% of retroperitoneal extra-adrenal paragangliomas in their study and tended to occur as paragangliomas increased in size. Thus, the answer to your question is Yes, there exists relationship between imaging features and pathological findings.

3) MRA is a good way to show tumor vessels. Did the authors acquire MRA for these cases and get any different results between retroperitoneal paragangliomas and schwannomas?
Response: Thank you for comments. Our study was retrospective, due to the study’s retrospective nature, no MRA was acquired for these cases.

4) The paper writing is not so good and needs to be carefully modified.

Response: We have revised the manuscript according to the reviewers “suggestions and comments”. And, the paper has been again polished by a copyeditor.

REVIEWER 2
In this manuscript, the authors presented a research on radiological differences between benign retroperitoneal extra-adrenal paragangliomas and schwannomas. Overall, the research is quite interesting. However, there are still some concerns need to be addressed.

1) The most unreasonable part of this research is the processing of medical image. The authors utilized radiological characteristics diagnosed by two radiologists. The authors should invite another experienced radiologist to get a more reliable result.

Response: Thank you for your positive comments. According to the relevant literatures (line 398-403), the traditional method of evaluating image characteristics is carried out, and the final result is based on the gold standard of pathological findings. Thus, we don't think that it will change our results with another radiologist involved in evaluating the image features.

2) Please provided the AUC, 95% CI of predictive model using necrosis and degree of tumor enhancement.

Response: Thank you for your comments. We have revised the manuscript in the Table 5 and line 230-232.

3) Some grammar and spelling mistakes should be modified.
Response: We have revised the manuscript carefully. Further, the paper has been again polished by a copyeditor.

I hope we have addressed these comments satisfactorily. Please do not hesitate to contact me if you need any further information.

Yours sincerely
Huiyi Ye