Author’s response to reviews

Title: Ultra high-field SWI of the substantia nigra at 7T: reliability and consistency of the swallow-tail sign

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Author’s response to reviews:

Dear Editor, dear Reviewer,

We are very grateful for your thoughtful and helpful comments regarding our manuscript and revised the manuscript according to your advice.

We have uploaded two versions of the manuscript, one with all changes highlighted.

Please find below a detailed point-by-point response to your comments.
Reviewer reports:

Reviewer 1: The authors performed SWI at 7T in 13 healthy adults in order to validate the presence of the swallow tail sign within the substantia nigra. The technical aspects sound fine. Nevertheless, I have some concerns:

- Such a study which tries to validate this sign in a normal healthy control should include markers of prodromal PD such as olfactory function or nigral hyperechogenicity or DAT-SPECT to exclude that the subjects have prodromal PD (Berg et al. Mov Disord. 2015 Oct;30(12):1600-11. doi: 10.1002/mds.26431)

Healthy subjects included in our study, showed no early signs of Parkinson’s disease such as anosmia, sleep disorders or autonomic dysfunction and had no family history of PD (page 5, line 119). Our cohort comprised relatively young subjects (mean age = 46.7 y). Assuming a ten year prodromal period, the reported prevalence of prodromal PD is only 0.5 % at age 55 (Berg et al. Mov Disord. 2015), and can be estimated even lower in our cohort, given the young mean age. We have updated the discussions section accordingly (p. 8, l. 219 ff). We abstained from DaTSCAN examinations in healthy subjects to avoid any radiation exposure.

- Two studies have not been discussed in the paper, one is a very recent meta-analysis (Mov Disord. 2017 Feb 2. doi: 10.1002/mds.2693-2), the other the largest study published so far (Mov Disord. 2015 Jul;30(8):1068-76. doi: 10.1002/mds.26171).

We are thankful for this helpful remark. We included both studies and updated our discussion section (p. 7, l. 173)

- Interestingly, figure 2 D shows the dorsolateral nigral hyperintensity at both sides. Moreover, figure 2 F seems to have dorsolateral nigral hyperintensity also at the right side - however there are artifacts. I believe that the authors should re-evaluate their images.

We re-evaluated the images accordingly. The image presented in Figure 2 D shows the one subject rated “absent swallow-tail sign left” in consensus reading of the 3 neuroradiologists involved in this study. Figure 2 E and 2 F show the two subjects rated “absent swallow-tail sign bilaterally” in consensus reading of the 3 neuroradiologists. In our opinion there are no artifacts.

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