

Author's response to reviews

Title: Ipsiversive ictal eye deviation in inferioposterior temporal lobe epilepsy--Two SEEG cases report

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Author's response to reviews:

Reply to Reviewer #1

1. We did not test the visual fields before the surgery on the two cases, because we did not presume that the epileptogenic zone locate on the early visual areas such as V1, V2, V3 and V4.
2. There were no detectable deficits on the function of smooth pursuit eye movement on the two cases after surgery.
3. For case-1, he had no responses to the outside stimulation since the onset of epileptic seizures. For case-2, loss of contact also happened at the initial stage of clinical seizures with prior epileptic visual aura on the most diurnal seizures.
4. Yes, eyes deviation during the epileptic seizures was interpreted as a manifestation of "ictal neglect" in some literature. We do not agree with this interpretation for the reasons elaborated below: (1) from 2nd SEEG detection in the case-1, we have obtained many times of minor seizure appeared in clusters, which lasting only for several seconds and manifested as left eyes deviation without limb tonic posture. We did not show this type of minor seizure because of the drug withdrawal of all anti-epileptic drugs. But these minor seizures manifested the linear relation between the short lasting high frequency oscillations on anterior bank of AOS with the ipsiversive eyes deviation. The ictal SEEG of the minor seizure was demonstrated at the end of the letter (fig1-3). (2) in case-2, the epileptic aura (reported by the patient as a kind of visual illusion "mimicking watch 3D movie"), we think, can be regarded as the result of forced eyes deviation because of disability to fix correctly and voluntarily; (3) in fact, we have another case

the epileptogenic zone on which was located at the anterior bank of the right AOS, and the initial clinical sign was manifested as eyes convergence rather than ipsiversive deviation. Under Physiological condition, Voluntary eyes convergence movement can be regarded as a special type of pursuit movement guided by a moving visual stimulation. Taken together, we believe that the epileptic discharge involved the pursuit eye system (MST/MT complex in these two cases) can induce ictal eyes pursuit movement and the ipsiversive eyes deviation of the two cases should be interpreted as “forced eyes deviation” rather than “ictal neglect”.

5. In the case reported by the paper entitled “Illusory shadow person causing paradoxical gaze deviations during temporal lobe seizures”, the non-versive eyes deviation was to the contralateral side of the epileptogenic zone. The author regarded that the epileptic visual hallucination were reproduced by electrical cortical stimulation, and lead to the non-versive head and eye deviation. In our case-2, the epileptic aura, we thought, is one type of visual illusion, but not visual hallucination, and the reason of this epileptic aura is the disability to fix well due to “forced eyes deviation”.

6. Thank you for your detailed assessment and constructive advices. We will adopt your linguistic suggestions and revise the manuscript. We also have reviewed some diagrammatic representations on smooth pursuit eyes movement. We did not show these in our manuscript because of the difficulty to obtain the permission from the authors.

Thank you very much!

Reply to Reviewer #2

1. In case-1, the ictal SEEG shows the initial slow and succedent high-frequency oscillations (HFO) on electrode G', with the HFO spread to other cortical areas widely and quickly. Because there were no electrodes ahead of the electrode G', we did the 2ndSEEG to determine the anterior boundary of the epileptogenic zone.

2. From the 1st SEEG recording of case-1, we obtained the evidence of extensive cortical involvement at the early stage of electrical seizure. The detailed analysis of HFO propagation during early stage of electrical seizure has been demonstrated on Fig 4-12.

3. In case-2, the clinic semiology of “making a fist with the right hand” is reported by the parents of the patient, and the followed statement of “leftarm tonic proximally with left fist clenched” was obtained from the video-EEG monitoring in ictal phase. So we suspect there may be some erroneously observation or interpretation of ictalsemiology by his parents, but we think it will not impact the understanding and assessment of the value of the electro-clinical semiology.

4. I think because of my nonnative writing, there are some misunderstanding about the sentence written as “which had been described above in detailed”, I will revise it.

5. Do you think deleting the occlusion on the eyes is much better for presentation? In order to protect the privacy of the patient, I think it is better to demonstrate the patient's face and eyes separately rather than to show the whole body including the face and eyes intactly.

Thank you very much!