Reviewer's report

Title: MRI-negative PET-positive Temporal Lobe Epilepsy (TLE) and Mesial TLE differ with Quantitative MRI and PET: a case control study

Version: 2 Date: 2 May 2007

Reviewer: Patrick Dupont

Reviewer's report:

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The authors have clarified a number of points which has improved the manuscript but two major comments remain: only very large structures (except for the hippocampus) are studied and the heterogeneity - if existing - within these structures is not studied (with VBM or related methods). The second comment relates to partial volume effects. One has to be careful in using the argument that "it is unlikely that partial volume effects have played a significant role in the reported results, given the marked metabolic (FDG PET) asymmetries seen in structures shown to be volumetrically much less asymmetrical" because in the large structures studied, heterogeneity may be present which may have many causes (besides partial volume effects). The results obtained in this manuscript may therefore still suffer from a lack of partial volume correction. I respect the decision of the authors not to add additional analysis but I feel that they should at least discuss these points as limitations of their study in the discussion section.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Add the standard deviation in tables 4, 5, 6 and 7 so that the reader has an idea about the variability.

Remove the sentence "OSEM provides significant resolution recovery and minimizes partial volume effects" op p9 since OSEM may provide resolution recovery but it cannot be considered as a partial volume correction method (as might be concluded by some readers).

Add the iteration scheme used during OSEM (number of iterations and subsets) since this directly influences the results of the PET data (relating to convergence of the solution).

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests