Author's response to reviews

Title: In-vivo visualisation of the anatomical structures related to the acupuncture points Dai mai and Shen mai by MRI. A single-case pilot study.

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**Answers to the points addressed by Drs. White and Langevin**

**Innsbruck, September 24th, 2006**

Reviewer P.J. White

“This paper is very much improved from the last draft. It is much clearer, less ambiguous and flows well. The text largely stays on track with regard to the question under investigation. The addition of the flow chart greatly aids understanding. My only other additional comment on the current text is that the last paragraph of the discussion should be deleted. Whilst investigation of this particular point might be of great interest to the authors, this information has little relevance to the aims of the paper i.e. "to test the feasibility of a combined TCM and technological approach for the in-vivo characterisation of acupuncture point localisation using state of the art MRI imaging."

The inclusion of the data on vision and the Shen men point might appear to be irrelevant at the present time. However our state of knowledge shows that the two points being described here are essential in controlling posture, gait and vision. Acupuncture can play a basic role in treating disorders of these functions, therefore we wanted to include this hint here already. The paragraph has not been included any longer.

“Finally, I would like to point out that I am aware that the references I provided do not deal with MRI imaging of the acupuncture point. They do however deal with attempts by other researchers to identify the anatomical nature of acupuncture points. The authors had previously stated that that there was little information on the anatomical nature of acupuncture points, these references are examples of such studies. The background could therefore be improved by a discussion of the current evidence and the fact that alternative methods have thus far failed to provide definitive answers. The use of MRI in vivo might represent a step forward in this search for answers.”

We feel encouraged by this comment. We are aware of all the references given by the reviewer and have added a short comment on them. We have also discussed shortly the use of post-mortem human material, which in our view does not constitute an ideal substrate due to the loss of turgor.
On page 7, reference to Figures 3 and 4 appear to indicate Figures 4 and 5 instead.

**Corrected and checked!**

The arrows on Figures 4, 5 and 6 indicate the general direction of the needle, which is helpful. However, it still takes a lot of imagination to ascertain where the tip of the needle is in the human images (while it is clearly seen in the onion and banana). Since one of the main points of the paper is that this technique can be useful to detect the position of the needle, the lack of a convincing demonstration of the position of the needle tip is a serious problem. In the text, the authors make several statements which are a bit of a stretch such as: "the tip of the needle was in contact with the superficial fascia of the abdominal internal oblique muscles". At this point, it unfortunately seems that the data presented only weakly support the authors’ conclusions. Either more convincing images should be presented to demonstrate that the needle tip position can be seen clearly, or the conclusions of the paper should be limited to demonstrating the feasibility of using gold needles in an MRI scanner environment.

The use of print media for the presentation of high resolution graphics has limitations. While our diagnostic workstations (J-Vision, TIANI) achieve a high resolution based on dual processor hardware, these details get lost on digital files for publications. We have left the sagittal image and added a set of 3 adjacent transversal slices. The colors of these transversal images have also been changed in order to facilitate the recognition of muscle tissue (left and right panel). The needle insertion is seen on the middle panel. We have included a note in the main text referring to the discrepancies between workstation quality and print media quality.

Page 11, Figure 4 legend: first sentence is incomplete "reconstructing using...?

**Image reconstruction was done with the J-Vision software of the TIANI workstation.**

Background page 4: 1st para, lines 4-5: A more accurate statement would be: "It has been hypothesized that the initiation of the effects of acupuncture depend on several ...." since this view is still at the hypothetical stage.

**We have deleted this hypothetical comment.**