**Use of Shape-from-Shading to Characterize Mucosal Topography in Celiac Disease Videocapsule Images**

We thank the reviewers and editor for their kind assistance in improving the quality of the manuscript. Major changes in the text are shown in blue font.

**Reviewer 1**

Comments: - in this paper, authors apply “shape-from-shading” modeling in celiac patients confirming previous data about the usefulness of this technique in increase the role of videocapsule studies in celiac disease. Therefore no substantial novel aspect emerged from this paper. - the sample size is too small to assess definitive conclusion on this technique. - patients' characteristics must be more exhaustive (both in the text and in the table). - the lack of statistical analysis is a “sore point”.

We thank the reviewer and have incorporated the comments into the revised manuscript. We have now included a quantitative analysis. Computerized means were used to determine the topographic variation based on elevation levels of the intestinal mucosa. This is described in the text and in a new figure (Figure 5). A statistical analysis was performed, with mean and standard deviation given. Significance was found in comparing celiac versus control patient data. Furthermore, based on the scatterplot in Figure 5, celiacs versus controls were classified using a linear discriminant function.

**Reviewer 2**

1) The paper was too descriptive and therefore, not scientific. Scientific paper should demonstrate the data of numerical values with statistics. In this regard, the constructed images in this paper should be digitized, and the correlation between certain numerical values in the images and pathology should be analyzed with statistics.

We thank the reviewer and have incorporated the comments into the revised manuscript. As mentioned above, we have now included a quantitative analysis. We determined the topographic variation of the small intestinal mucosa by computerized means. It was shown that the values for celiacs versus controls were significantly different (p ≤ 0.025). In the new Figure 5, celiacs versus controls were classified using a linear discriminant function.

2) I do not think that the 3 dimensional images and/or false color images worked well in the diagnosis and pathological staging of celiac disease. Those images did not appear to sufficiently surpass the non-processed 2 dimensional VCE images. The superiority of the processed images should be demonstrated with statistical analysis.

We have now included a statistical analysis of the new automated method. Please see Results and Discussion. The findings concurred with prior work, as noted and cited.

3) Images of all subjects were not necessary. Representative images of patients and controls should be selected. In addition, pathological images of microscopy should be added in each figure so that readers can compare images with pathological findings.

We have reduced the number of figures. Regarding the pathologic findings, we now state –

All patients in the study, except one with hemophilia, first underwent a standard endoscopic procedure with biopsy to determine the presence and severity of any villous atrophy in the proximal duodenum. Then all patients additionally underwent videocapsule endoscopy. The quantitative biopsy results cannot be directly compared to the quantitative videocapsule results, but are used as a reference as to the presence and severity of villous atrophy.

4) In this regard, results and discussion were too redundant. Those sections should be shortened. In particular, the first section of the Discussion is repetition of the Results.

We agree and have removed most of the first section of the Discussion.