Reviewer's report

Title: 3D high-resolution anorectal manometry in patients with perianal fistulas: comparison with 3D-anal ultrasound

Version: 0 Date: 25 Jan 2018

Reviewer: François Mion

Reviewer's report:

The authors must be congratulated for this effort to make the most from 3DARM data in the context of perianal fistulas. The results are potentially interesting, but more detailed informations are needed.

First of all, to assess the agreement between EUS and ARM, a group of patients with no fistula at EUS should be included, and the 3DARM data should be measured blindly from the results of EUS: the assymetry or pressure "grooves" as described by the authors are frequently seen in patients without fistulas in my own experience.

The authors should clearly state if they measured the regional FTA pressures at the position identified by EUS, or at the lower regional pressure as seen on the 3DARM open cylinder: this is clearly not the same, and the results should be obviously different.

Second, the figures and description of methods should be improved. For example, figure 2 is supposed to show a good agreement between EUS and ARM: the authors should indicated precisely on the figure where is the anterior, posterior left and right on the EUS and ARM. Furthermore, the lower pressures on the cylinder seem to be located on the right anterior part of the pressure cylinder, while the "groove" line is situated on the left anterior part of the the open cylinder.

I also have a problem with the definition of the "pressure groove" and its representation on figure 2C: the authors indicate in the method that a "groove" was defined as a delta MRP > 30 mmHg throughout the entire lenght of the sphincter. However, the dotted line indicating the "groove" according to the legend of figure 2c is traced by the software as representative of the lower pressure path along the sphincter, whatever the pressures variations, and is present in all 3DARM recordings.

I also encourage the authors to better represent on figures how they measured the upper and lower limits of the anterior and posterior high pressure zone on the 2D open cylinder: this would be very helpful for the understanding of the manuscript.
I don't find figure 4 very useful, it should be removed, as well as the algorithm presented in figure 5: I don't think at this stage that 3DARM can be included in the work-up of perineal fistula. The authors themselves acknowledge in their last sentence that "3DARM ... cannot be recommended as a routine procedure in patients undergoing fistula surgery".

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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