Reviewer's report

Title: Direct intra-abdominal pressure monitoring via piezoresistive pressure measurement. A technical note.

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Reviewer: Manu Malbrain

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The article is well written, straight forward and to-the-point in good English on a hot, clinically relevant and what some even call a “sexy” subject: congratulations!

Any definition of IAH and ACS stands or falls with accurate, correct and reproducible IAP measurement. I have some comments:

The number of patients is quite low. I’m also puzzled by the fact that data could only be collected in 3 out of 10 patients. So maybe more patients should have been included. Was there a learning curve contamination bias, meaning that the last inserted probes worked fine or were the probes too fragile. In any case it is good that negative results are also reported.

Omit statement with regard to local ethical committee number from abstract and put into methods section.

Introduction. The article referred to (reference 2) looked at prevalence and not incidence as stated (1). In the incidence study the incidence of IAH and ACS differed with regard to the use of mean versus maximal IAP values: 32% (mean) versus 37% (max) for IAH and 7% (max) vs 4% (mean) for ACS. Please correct, thanks.

Please expand abbreviations when used for first time and use them in a concise way afterwards.
IAP, IVP, PRM,…

Methods:

Could these probes also be put into the rectus abdominis muscle space cfr recent data by Meier – since they are so fragile this might be a better option – please discuss(2).

A drawback is that 50 mL were used to prime the bladder – but I guess that this was common practice at the time of the study. It is also discussed – add recent references on this issue in discussion: Add references with regard to gastric pressure measurements by Turnbull (3), and Malbrain and Chiumello with regard to saline volume (4, 5)
Another drawback is that the level of the symphysis was used – recent data show that this may also affect the results.

Results
Small sample size. Add data on percentage error. Baseline IAP values were also quite low – it would have been better if the IAP range was broader or if IAP was increased with for instance a Velcro belt or during laparoscopy…

In conclusion: nice small study, well performed and providing honest results.

References


