

- Does this analysis permit making suggestions as to when not to perform surgery in women with suspected abdominal wall endometriosis?

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<https://doi.org/10.1016/j.jmig.2017.11.022>

## Author's Reply



To the Editor:

We thank Koninckx et al for their comments on our article. Since imaging modalities have improved, abdominal wall endometriosis and other deeply infiltrating endometriosis lesions become a topic of interest. Just in the past year, several case series have been reported on abdominal wall endometriosis [1–5].

We agree with Koninckx et al that a comment on the sensitivity and specificity of clinical examination in women with abdominal wall endometriosis from this report is not possible in the absence of a group with women with abdominal wall lesions who did not undergo surgery. We were very careful to not make these claims in our report. Our report was a case-control study comparing women with abdominal wall

endometriosis and women with minimal disease. Our goal was to comment on risk factors and other clinical symptoms seen in women with endometriosis who develop abdominal lesions, and to see how they differed from those in women with common pelvic endometriosis. The goal was not to assess the sensitivity and specificity of the clinical examination as a diagnostic test.

In addition, we agree with the commenters' example of height being a poor predictor of sex. The clinical correlation between the size of the abdominal wall nodule at time of clinical exam to size at pathology was a mere observation and an important one to report, because it highlights the importance of a thorough, detailed clinical examination that can aid surgical planning and possibly eliminate the need for additional imaging in obvious cases.

Finally, to answer questions raised by Koninckx et al:

- An exact number for the lowest detection limit is difficult to determine, because it depends on several variables, most importantly the patient's body habitus and body mass index. In our series, the smallest size nodules palpated by clinical exam, ultrasound, and magnetic resonance imaging were 1 cm, 1.5 cm, and 2 cm respectively. It is important to note that this does not mean that clinical examinations were able to detect the smallest lesions. This was what we observed in our series.
- This report does not permit suggestions on how to find a presumed small nodule. It merely demonstrates a correlation between the nodule size determined on clinical examination (if the nodule is palpated) and the actual size as determined by surgical pathology.
- This review does not address the question of when not to perform surgery in women with suspicion of abdominal wall endometriosis. The study objective was to comment on risk factors, clinical presentations, and outcomes after surgery in patients with abdominal wall lesions.

We thank Koninckx et al for their interest in our report, meticulous critique, and very important questions. We look forward to studies addressing more of these questions.

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<https://doi.org/10.1016/j.jmig.2017.12.002>

### Regarding “Ultrastructural Investigation of Pelvic Peritoneum in Patients with Chronic Pelvic Pain and Subtle Endometriosis in Association with Chromoendoscopy”



#### To the Editor:

We did appreciate the nice pictures in the article on ultrastructural investigation of pelvic peritoneum in women with pain and endometriosis [1]. The use of methylene blue to stain and diagnose endometriosis or damaged peritoneal areas remains debatable since the original observation in 1994 [2].

We are interested to know the time interval between the beginning of laparoscopy and the peritoneal biopsy. Indeed, some of the changes observed could be explained by mesothelial cell trauma by the CO<sub>2</sub> pneumoperitoneum and/or by removing the biopsy specimen through the trocar. Indeed, over the last decade awareness has grown that mesothelial cells are extremely sensitive to any type of trauma and react within seconds by retraction. Exposure to CO<sub>2</sub> pneumoperitoneum thus leads to bulging of cells within 30 minutes of exposure [3]. Unfortunately, this article did not mention that in order to obtain their excellent scanning electron microscopy images in mice, *in vivo* fixation of the peritoneum had been necessary. Indeed, the time needed to take a peritoneal biopsy specimen by laparoscopy or laparotomy and the unavoidable exposure to CO<sub>2</sub> pneumoperitoneum or, worse, to air with 20% oxygen already induced important mesothelial changes. In addition, saline used for irrigation rapidly damages the mesothelium. This mesothelial reaction [4] and the consequences for postoperative adhesion formation and their prevention by conditioning were recently reviewed [5–7].

Because pathologists generally see more than can be described in an article, this comment is a suggestion to reconsider your results, especially the relationship with endometriosis by taking into account this rather recent observation of rapid mesothelial damage by CO<sub>2</sub> laparoscopy. In addition, we hope to increase awareness of this rapid mesothelial reaction because it is important for future studies on mesothelial morphology.

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<https://doi.org/10.1016/j.jmig.2017.10.030>

### Author’s Reply



#### To the Editor:

On behalf of all authors of the paper entitled, “Ultrastructural Investigation of Pelvic Peritoneum in Patients with Chronic Pelvic Pain and Subtle Endometriosis in Association with Chromoendoscopy” [1], we thank Drs. Philippe R. Koninckx and Anastasia Ussia for the kind words of appreciation and comments on the scanning electron microscopy (SEM) images. Here we reiterate some comments discussed before in detail by the authors in original article.

In gynecology the idea of staining with methylene blue to identify abnormal peritoneal areas dates back to a 1994 report by Canis et al [2]. As mentioned in the article, most stained areas displayed mild and moderate destruction, and the nano-scale methylene blue granules could settle between the destroyed superficial tangle strands but could not deposit on the denuded cell surfaces (for severe destruction). Hence, all severely destroyed and denuded mesothelial surfaces were colorless. We do agree that the use of methylene blue cannot be a precise diagnostic method for all affected peritoneal areas.

As to the inquiry regarding the time interval, after placement of umbilical and lateral trocars, careful inspection of the pelvic cavity was done in 2 to 3 minutes. Instillation and washing with methylene blue was performed in 5 minutes. To minimize tissue damage, the peritoneum was excised by scissors, grasped, and pulled out gently through an 10 mm Kii Access Systems trocar (Applied Medical, Santa Margarita, CA). This cannula has the advantage of a detachable