Adenomyosis and deep infiltrating endometriosis—how can disease severity be determined and correlated?

In 1860, Carl Rokitansky, a Viennese pathologist, was the first to describe adenomyosis by examination of histological sections of the uterus and the rectovaginal space (1). Since then, many attempts have been made to elucidate the etiology and optimal therapy of adenomyosis and deep infiltrating endometriosis (DE), which have been described as commonly associated entities in several studies. The subsequent article of this group of authors, “Focal adenomyosis in the outer myometrium and deep infiltrating endometriosis severity” in this issue of *Fertility and Sterility*, provides further information on a possible link between focal adenomyosis of the outer myometrium (FAOM) and DE. Based on preoperative magnetic resonance imaging (MRI) findings depicting adenomyosis and complete surgical excision of DE, the authors observe FAOM in 56.5% of 255 DE patients with higher absolute numbers of DE lesions and higher revised American Society for Reproductive Medicine (r-ASRM) scores in patients with FAOM, suggesting FAOM as a marker of disease severity (2).

However, after rereading this article, several questions emerge and prompt us to discuss two main issues. First and foremost, the exact relationship between DE and adenomyosis as defined by histopathological analysis is not well established because histological confirmation can be performed only in women undergoing hysterectomy. Although the authors used stringent criteria for diagnosis of adenomyosis via MRI, a recent meta-analysis by Tellum et al. (3) including only studies correlating MRI diagnosis of adenomyosis with histopathological confirmation of hysterectomy specimen revealed an overall sensitivity of 78% (70%–84%), specificity of 88% (83%–92%), positive likelihood ratio of 6.8 (4.5%–10%) and negative likelihood ratio of 0.25 (0.18%–0.35%) for MRI, thereby leaving a certain percentage of inaccurate diagnosis of adenomyosis by MRI in the study discussed.

Another issue with the article is the use of the r-ASRM score for description of severity of disease. As mentioned in the discussion section, the r-ASRM was designed primarily to describe intra-abdominal peritoneal endometriosis including adhesions with a focus on the fallopian tube and consequent effects on fertility. However, DE affects subperitoneal tissues and is poorly described by the r-ASRM classification. A study by Haas et al. (4) supports the observation that about one-fifth of patients scored stage 1 and 2 by r-ASRM will exhibit deep infiltrating disease that will therefore not be described accurately due to the use of an adhesion-based score focusing on peritoneal changes such as the r-ASRM. The Enzian classification for DE overcomes these problems, as a recently presented and updated version refers not only to the extent of DE but in addition describes ovarian and peritoneal disease also including secondary adhesions affecting the fallopian tubes. Further studies clearly support its clinical relevance (5) and are needed to validate the use of the so-called #Enzian classification in everyday clinical practice.

The main strength of the study by Marcellin et al. is the relatively large number of patients who were prospectively followed, were investigated by MRI, and underwent operation in the same institution, thereby eliminating biases associated with different surgical approaches and investigative techniques, namely, different MRI protocols and radiologists. The link between FAOM and DE is clearly demonstrated and underlined by the significant differences in numbers of DE locations in patients with and without FAOM. In conclusion, the observation of FAOM either by MRI or by transvaginal sonography could act as a “red flag sign” for the concomitant presence of extensive DE and may therefore prompt further or more detailed noninvasive workup of these patients with a possible influence on clinical decision making.

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