Letters to the Editor

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Reply: Adenomyosis in endometriosis – prevalence and impact on fertility. Evidence from magnetic resonance imaging

Sir,

We thank the authors for their interest in our work. The bulk of the MR imaging scans of our study was obtained during 1999 through 2001. That is why we used the same MRI method as described in our publication of 2000 (Kunz et al., 2000). With this method, high quality scans were obtained (Figures 1 and 4 of our paper) (Kunz et al., 2005) which allowed us to identify alterations of the junctional zone that were interpreted as signs of focal and diffuse adenomyosis, respectively, according to the data of Reinhold et al. (1999). We were even more cautious in that a threshold value of more than 10 mm was chosen above which, with additional signs up to 12 mm, diffuse adenomyosis was assumed.

The authors report a lower prevalence of adenomyosis in endometriosis but confirm our finding of a significant impact of adenomyosis on subfertility and infertility in endometriosis. The discrepancy with respect to prevalence might be a matter of interpretation and the methods used. But it has also to be kept in mind that patient selection plays a key role in this respect.

According to our understanding of the disease process, minimal and mild endometriosis of the fertile woman, endometriosis in association with adenomyosis of the infertile woman and pre- and perimenopausal adenomyosis, respectively, constitute a pathophysiologic continuum that could be summarized with the term ‘syndrome of dislocated basal endometrium’ and is characterized in its clinically most important form by pain, infertility and bleeding disorders. Circumstantial evidence suggests a causal relationship with uterine peristalsis and dysfunctions. In women with normoperistalsis, minimal and mild endometriosis might develop without affecting fertility. Chronic uterine peristaltic activity throughout the reproductive period of life might result in pre- and perimenopausal adenomyosis. In our study, the prevalence of adenomyosis in the ‘total control group’ is largely due to the inclusion of women older than 35 years of age. This ‘functional ageing’ of the uterus might, in the general population, be further enforced by additional trauma such as pregnancy and delivery, as well as abortion curettage.

In infertile women, due to an abnormal stimulation of oestimetric estrogen receptors that results in hyperperistalsis (Leyendecker et al., 2004), the process of the development of endometriosis and adenomyosis, respectively, is intensified and advanced. On a temporal scale, however, the development of the two disease varieties might not take place simultaneously.

References


detection of hyperintense myometrial spots, which are the findings most specific to adenomyosis. Second, the usefulness of fat-saturated turbo-spin echo sequences for the detection of adenomyosis has never been demonstrated. Third, breath-hold T2-weighted sequences (true fast imaging with steady-state precession and turbo-inversion-recovery sequences) offer better differentiation between focal adenomyosis and uterine contraction, optimize the accuracy of MR imaging for the diagnosis of adenomyosis and reduce interobserver variability, while fast spin-echo T2-weighted images and breath-hold T2-weighted sequences appear to have similar accuracy (Bazot et al., 2003).

Concerning the MR imaging criteria, Kunz et al. considered that a junctional zone maximum of >11 mm (JZ_max) was alone sufficient for the diagnosis of adenomyosis (Reinhold et al., 1996). In our experience, however, isolated JZ_max >11 mm has a sensitivity and specificity of, respectively, 62% and 96% for the diagnosis of adenomyosis (Bazot et al., 2001). The combination of JZ thickness with high-signal-intensity myometrial spots, JZ_max/entire myometrium >40% and regular homogeneous uterine enlargement increases the accuracy of MR imaging in women with adenomyosis who do not have associated leiomyomas, raising the sensitivity and specificity to 87% and 100%, respectively (Bazot et al., 2001). Regarding clinical implications, using a JZ_max threshold of 10 mm as a criterion of adenomyosis, Kunz et al. found a very high prevalence of adenomyosis in the ‘total endometriotic’ group (79%) compared to both ‘healthy controls’ (9%) and ‘total controls’ (28%) (Kunz et al., 2005). These results contrast with those of a recent study in which only 44 (27%) of 163 women with pelvic endometriosis proven by laparoscopy and histology had adenomyosis on pre-operative MR imaging (Bazot et al., 2004).

Finally, like Kunz et al, we also found that uterine adenomyosis was the main determinant of infertility in a series of 34 women undergoing laparoscopic segmental colorectal resection for endometriosis, 22 of whom wished to conceive (Darai et al., 2005).
but rather with a variable time interval with endometriosis usually coming first and followed by adenomyosis as the main determinant with respect to infertility. Thus, in this dynamic process of disease development no static value for the prevalence of adenomyosis in endometriosis can be expected. This value varies dependent on the study population chosen. In our study, all patients or couples including the ‘healthy’ and ‘total controls’ were suffering from infertility and were seeking treatment by assisted reproduction, increasing the probability that both the peritoneal and the uterine variant of the disease had developed in these women.

References


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