

Endometriosis and lower urinary tract symptoms: association or causation?



Both endometriosis, which affects approximately 10% of women globally, and lower urinary tract symptoms (LUTSs), which affect approximately 33%, are known to affect the quality of life. Endometriosis primarily detracts from the quality of life in the form of pain during sexual intercourse, bowel movements, or general activity. Patients with endometriosis additionally experience depression and anxiety at increased rates (1). Similarly, women with LUTSs are more likely to have clinically significant anxiety and poorer quality-of-life metrics (2). Given the physical and psychological distress experienced by patients with either endometriosis or LUTSs, the potential for both the conditions to coexist is concerning.

In this issue of *Fertility and Sterility*, Gabriel et al. (3) conducted a cross-sectional analysis to determine the association between endometriosis and LUTSs, which are both highly prevalent in women worldwide. The investigators were able to add to the body of literature on this topic by evaluating the potential associations within a large cohort of over 1,100 patients. The investigators should be commended for using the Women's Health Study, which provided high-quality data, including surgical staging of endometriosis based on the revised American Society for Reproductive Medicine (rASRM) classification. They ultimately concluded that although all women experienced LUTSs at high rates, patients with endometriosis experienced most LUTSs at significantly higher rates than patients without endometriosis. Furthermore, the investigators found that endometriosis was independently associated with some LUTSs but that the rASRM-based stage had no effect (3).

Before the work of Gabriel et al. (3), the number of investigations of this potential association between endometriosis and LUTSs had been limited. Previous studies exploring the association had primarily found that endometriosis invading the bladder was specifically likely to cause LUTSs (4). Interestingly, the investigators of this study found no effect, as determined based on rASRM staging, and in their analysis, they were unable to comment on bladder-specific infiltration. The investigators propose that the association is due to the overlap of neural control pathways between bladder function and endometriotic lesions. In women with endometriosis, there is predominance of sensory C and sensory A-delta sympathetic and parasympathetic nerve fibers in the functional layer of the myometrium. However, this innervation

is not found in women without endometriosis (5). The role of the autonomic nervous system in bladder dysfunction makes it plausible that this difference in nerve fiber densities might serve as a causal explanation for the association identified by Gabriel et al. (3).

The investigators of this study ultimately conclude that patients with endometriosis should have any concurrent LUTS addressed, given the high prevalence of LUTSs and the high rate of its concurrence with endometriosis. As the investigators themselves contend, this study is limited by its lack of longitudinal data, and it would be important to evaluate a temporal aspect of the association. Additionally, a more detailed and expanded examination of the effect of specific anatomic locations of endometriotic lesions would have better placed this work within the context of previous investigations. The results of this study only establish an association; however, the determination of true causality would help to better guide clinical practice. This study is an important start for future work because it would be beneficial to learn whether the treatment of endometriosis has a mitigating effect on concurrent LUTSs that plague patients.

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