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Mini-commentary on BJOG-19-0429.R1: Reproducibility of the Endometriosis Fertility Index: a prospective inter/intra-rater agreement study

### **Surgery for endometriosis-related infertility**

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Endometriosis affects fertility in a miscellaneous number of ways, including anatomical pelvic distortion and hormonal and inflammatory disturbance. It is estimated that 30-50% of women with endometriosis suffer infertility. As such, an estimate of the chances of natural conception in women with endometriosis is important.

The commonly used Revised American Fertility Society classification of endometriosis (rAFS) does not predict pregnancy rate after treatment and is exclusively based on surgical findings. The endometriosis fertility index (EFI) was proposed in 2010 as a new staging system for endometriosis (Adamson GD et al. *Fertil Steril*. 2010;94(5):1609-15), and utilizes clinical data that includes female age, duration of infertility and previous pregnancy history. Tomassetti's study in this issue of the journal confirms that the EFI is reproducible, and can be used to predict fertility potential after surgery for endometriosis, thus being a tool to counsel women (Tomassetti C et al. *BJOG*. 2019 Jul 18. doi: 10.1111/1471-0528.15880. [Epub ahead of print]).

While the availability of the EFI represents progress in the management of endometriosis, the main question about whether fertility is improved following surgery for endometriosis remains unanswered. While some studies suggest that laparoscopy is effective, others do not confirm this finding. Randomized clinical trials evaluating fecundability after ablation for minimal/mild endometriosis show contradictory results (Duffy JM et al. *Laparoscopic surgery for endometriosis*. *Cochrane Database Syst Rev*. 2014;(4):CD011031). Furthermore, there are no randomized clinical trials comparing surgical treatment versus medical or expectant treatment for moderate/severe endometriosis. The expectation that surgery may be beneficial is based on observational studies that failed to adequately adjust for confounders or lacked descriptions of the stage of endometriosis being treated (Somigliana E et al. *Fertil Steril*. 2015;104(4):764-70).

Thus, there should be concerted scientific effort to perform such trials. In Tomassetti's study, >150 women were undergoing laparoscopic surgery during a 6-month-time period, of which 125 had endometriosis. It would not be difficult to organize a randomized clinical trial that compares surgery

versus medical treatment or expectant management. Women could be randomized for surgery versus no surgery for a period of 6 or 12 months, with surgery being offered to all women who were randomized to the non-surgical groups after the study period.

Randomized studies cannot be done on a shoestring budget, but the funding need not necessarily be provided by external funders but could be obtained from academic units, health systems or insurance companies that currently finance surgical procedures with unknown effectiveness. Clinicians should dare to ask the question whether surgery for endometriosis is an effective treatment, and if so, when it should be done. Until that question is answered, pre-operative fertility counselling and management of women with endometriosis remains non-evidence based.

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