

LETTER TO THE EDITOR

Letter regarding Griffiths *et al.* “anti-Müllerian hormone decreased in women with superficial peritoneal endometriosis and associated with an elevated inflammatory profile”

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Dear Editor,

Griffiths *et al.* report reduced serum AMH and a distinct pro-inflammatory signature in women with isolated superficial peritoneal endometriosis (SPE), independent of any endometrioma (Griffiths *et al.* 2026). Most of the ovarian reserve literature in endometriosis has focused on endometriomas, so this is a genuinely new observation. It also raises a question the cross-sectional design cannot settle: what happens to AMH once these SPE lesions are removed?

Every study the authors cite on post-surgical AMH decline (Wang *et al.* 2020; Muraoka *et al.* 2021; Sarbazi *et al.* 2021; Fakehi *et al.* 2022; Mansouri *et al.* 2022; Shi *et al.* 2022; Tang & Li 2022; Crestani *et al.* 2023) is built around endometrioma cystectomy, where mechanical or thermal follicle loss during cyst wall dissection is usually taken to be the main driver of AMH decline. Guidelines recommend excising any accompanying superficial lesions at the same operation (NICE 2017; Becker *et al.* 2022), so it seems unlikely that any of these cohorts separated that surgical trauma from whatever smaller effect comes from removing SPE at the same time. Given that SPE itself appears to sustain a pro-inflammatory state that suppresses AMH, resolving that inflammatory component could partially offset the cystectomy-related decline – or it might not; the two mechanisms operate at different scales and there is no strong reason to assume they cancel out. Either way, it is a testable question that does not appear to have been asked directly.

The reverse case may be easier to study cleanly and is just as informative. In women with SPE and no endometrioma, does removing the lesions bring AMH back up, in line with the inflammatory story told here? Or does operating near the ovarian fossa and utero-ovarian ligament – diathermy spread, for instance – reduce AMH regardless of any anti-inflammatory benefit? The one existing AMH study in an SPE cohort, Lessans *et al.* (2024), was cross-sectional too, at least from what is described here, and does not report postoperative values.

Griffiths *et al.* (2026) mention an observational cohort and biobank running since 2015, which could support this kind of follow-up. SPE-only surgery versus expectant management would be a reasonably clean prospective comparison, since both are already routine clinical choices. The combined case is messier: guidelines already recommend excising SPE alongside an endometrioma, so a true prospective arm without excision is hard to justify on ethical grounds, and this would more realistically have to rely on retrospective cases where lesions were left *in situ* for other clinical reasons. Any of these would also need to stratify postoperative AMH by subsequent hormone use, since that is what determined whether an effect was seen at all in the present study. This is not just a design detail – it is close to what a clinician needs to know before advising a woman with SPE, and no other apparent fertility problems, on whether surgery will help, harm, or make no difference to her ovarian reserve.

References

- Becker CM, Bokor A, Heikinheimo O, *et al.* 2022 ESHRE guideline: endometriosis. *Hum Reprod Open* **2022** hoac009. (<https://doi.org/10.1093/hropen/hoac009>)
- Crestani A, Merlot B, Dennis T, *et al.* 2023 Impact of laparoscopic sclerotherapy for ovarian endometriomas on ovarian reserve. *J Minim Invasive Gynecol* **30** 32–38. (<https://doi.org/10.1016/j.jmig.2022.10.001>)
- Fakehi M, Davari Tanha F, Asgari Z, *et al.* 2022 Risk factors for anti-Müllerian hormone decline after laparoscopic excision of endometrioma: a prospective study. *Int J Fertil Sterility* **16** 167–171. (<https://doi.org/10.22074/ijfs.2021.533920.1157>)
- Griffiths MJ, Brown ME, Gibson DA, *et al.* 2026 Anti-Müllerian hormone decreased in women with superficial peritoneal endometriosis and associated with an elevated inflammatory profile. *Reprod Fertil* **7** RAF250127. (<https://doi.org/10.1530/RAF-25-0127>)
- Lessans N, Gilan A, Dick A, *et al.* 2024 Ovarian reserve markers of women with superficial endometriosis. *Int J Gynaecol Obstet* **165** 696–702. (<https://doi.org/10.1002/ijgo.15310>)
- Mansouri G, Safinataj M, Shahesmaeili A, *et al.* 2022 Effect of laparoscopic cystectomy on ovarian reserve in patients with ovarian cyst. *Front Endocrinol* **13** 964229. (<https://doi.org/10.3389/fendo.2022.964229>)
- Muraoka A, Osuka S, Yabuki A, *et al.* 2021 Impact of perioperative use of GnRH agonist or dienogest on ovarian reserve after cystectomy for endometriomas: a randomized controlled trial. *Reprod Biol Endocrinol* **19** 179. (<https://doi.org/10.1186/s12958-021-00866-2>)
- National Institute for Health and Care Excellence (NICE) 2017 *Endometriosis: Diagnosis and Management*. NICE Guideline NG73. London: NICE. (<https://www.nice.org.uk/guidance/ng73>)
- Sarbazi F, Akbari E, Karimi A, *et al.* 2021 The clinical outcome of laparoscopic surgery for endometriosis on pain, ovarian reserve, and cancer antigen 125 (CA-125): a cohort study. *Int J Fertil Sterility* **15** 275–279. (<https://doi.org/10.22074/IJFS.2021.137035.1018>)
- Shi J, An D, Ye J, *et al.* 2022 Effect of early inflammatory reaction on ovarian reserve after laparoscopic cystectomy for ovarian endometriomas. *J Obstet Gynaecol* **42** 3124–3128. (<https://doi.org/10.1080/01443615.2022.2106559>)
- Tang Y & Li Y 2022 Evaluation of serum AMH, INHB combined with basic FSH on ovarian reserve function after laparoscopic ovarian endometriosis cystectomy. *Front Surg* **9** 906020. (<https://doi.org/10.3389/fsurg.2022.906020>)
- Wang D, Liu H, Li D, *et al.* 2020 Comparison of the impact of single-port laparoscopic and conventional laparoscopic ovarian cystectomy on the ovarian reserve in adult patients with benign ovarian cysts. *Minim Invasive Ther Allied Technol* **29** 224–231. (<https://doi.org/10.1080/13645706.2019.1624575>)