



BACKGROUND

- Endometriosis affects up to 50% of women with infertility
While surgery improves pain and pelvic anatomy, its effect on In Vitro Fertilization (IVF) outcomes remains unclear
Natural conception rates show a slight benefit following endometriosis removal, but data on IVF outcomes remain limited
Endometrioma resection may reduce ovarian reserve, raising concern for decreased euploid embryo yield

PURPOSE & OUTCOMES

Purpose: To assess the impact of laparoscopic endometriosis surgery, including endometrioma resection, on euploid embryo yield in patients undergoing IVF with PGT-A
Primary Outcome: Euploid embryo yield per cycle
Secondary Outcomes: Oocyte yield, mosaic embryos, aneuploid embryos, transferable embryos (euploid plus mosaic), and change in anti-mullerian hormone (AMH) from before surgery

MATERIALS & METHODS

Design: Retrospective cohort study at a single fertility center (2021-2025)
Population: Patients with surgically treated endometriosis undergoing IVF (N=73)
Comparison: IVF cycles prior to laparoscopic endometriosis surgery (N=49) vs IVF cycles following laparoscopic endometriosis surgery (N=78)
Statistical Analysis: t-tests and age-adjusted linear regression in Rstudio

TABLES

Table 1. AMH Before vs. After Surgery: Paired Analysis

Table with 4 columns: Category, AMH Before Surgery, AMH After Surgery, Age-Adjusted P-Value. Rows include All (N=40), Endometrioma Removal (N=10), and No Endometrioma Removal (N=30).

Table 2. IVF Outcomes per Cycle Before and After Laparoscopic Surgery for Endometriosis: Unpaired Analysis

Table with 5 columns: Outcome, IVF Before Surgery (N=49), IVF After Surgery (N=78), p-value, Age-Adjusted p-value. Rows include Oocytes, Euploid Embryos, Mosaic Embryos, Aneuploid Embryos, and Transferrable Embryos.

Table 3. IVF Outcomes per Cycle Before and After Surgery, Stratified by Endometrioma Removal Status: Unpaired Analysis

Table with 7 columns: Outcome, Endometrioma Removal (Before/After), Age Adjusted P-Value, No Endometrioma Removal (Before/After), Age Adjusted P-Value. Rows include Oocytes, Euploid, Mosaic, Transferrable, Aneuploid, and Blastocyst.

RESULTS

Baseline Characteristics (per IVF cycle):

- Pre-surgery patients were younger (35.22 ± 3.08 vs. 36.99 ± 4.48 years, p=0.010), trended toward higher AMH (2.99 ± 2.32 vs. 2.45 ± 2.21 ng/mL, p=0.205) with similar BMI (29.65 ± 5.18 vs. 29.91 ± 5.38, p=0.791)

Anti-Mullerian Hormone:

- No significant change in AMH after surgery, including endometrioma removal

IVF Outcomes:

- No significant differences in oocyte, euploid, mosaic, or aneuploid yields after surgery

Stratified IVF Outcomes:

- IVF outcomes remained nonsignificant when stratified by endometrioma removal status

CONCLUSIONS

- Surgical removal of endometriosis and endometriomas did not significantly change AMH or affect oocyte and embryo (euploid, mosaic, aneuploid) yields
Small AMH sample size may limit conclusions on ovarian reserve
Surgical decisions prior to IVF should remain individualized, based on factors like pain and cyst size, rather than fertility benefit

REFERENCES

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