

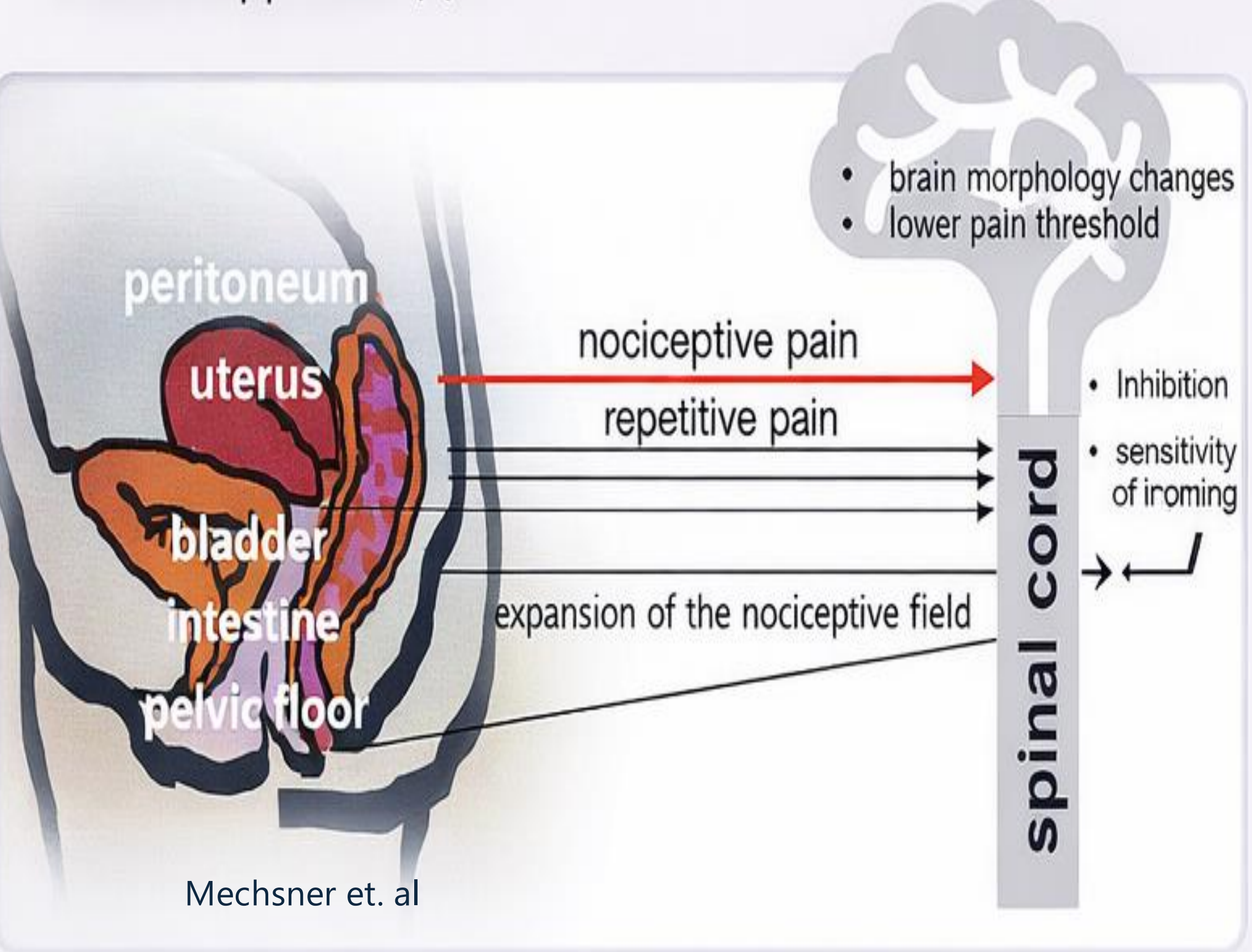
Postoperative Pain and Opioid Use After Minimally Invasive Endometriosis Surgery: A Propensity-Matched Retrospective Cohort Study

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INTRODUCTION

- Endometriosis affects **one in ten women** globally (1) and is characterized by **growth of endometrial tissue** outside **the uterus**, leading to **chronic pelvic pain** via **central sensitization** (2,3).
- When medical therapy is insufficient, **surgery becomes a key therapeutic option**, typically via a **robotic** or **minimally invasive** approach (4).



- Our understanding of **postoperative pain** after endometriosis surgery is extremely limited.
- No pain-related guidelines** have been developed for this specific patient population.

STUDY METHODS

5,011

Total Cases Analyzed

1,681

Endometriosis Patients

3,330

Propensity-Matched

STUDY DESIGN

- Single-center retrospective
- Propensity score-matched
- IRB approved
- 2013 – 2024

POPULATION

- Adult women
- Minimally invasive gynecologic surgery
- Hysterectomy or uterus-sparing procedures

PRIMARY OUTCOMES

- Maximal NRS pain score on POD0
- Total morphine milligram equivalents MME) on POD0

SECONDARY OUTCOMES

- PACU pain & opioid use
- PONV rate
- PACU length of stay

▶ **Statistics:** Propensity score-matched analysis + multivariable regression models adjusting for patient and surgical variables

RESULTS: UNIVARIATE ANALYSIS

Outcome Measure	Endometriosis (n=1,681)	Controls (n=3,330)	p-value
PACU OUTCOMES			
NRS at PACU Arrival	3.0	2.6	<0.001*
Maximum NRS in PACU	5.5	4.9	<0.001*
NRS at PACU Discharge	2.4	2.3	0.07
Total MME in PACU	24.7	22.0	0.05*
Opioids Received in PACU	78.5%	70.8%	<0.001*
PACU Length of Stay	190.6	176.2	<0.001*
PONV Rate	18.1%	14.2%	<0.001*
POSTOPERATIVE DAY 0 (POD0) OUTCOMES			
Maximum NRS on POD0	6.1	5.8	<0.001*
Total MME on POD0	53.6	49.3	<0.001*
Opioids Received on POD0	98.2%	97.3%	0.039*

+0.47 NRS points higher pain in endometriosis patients
(adjusted, 95% CI. 0.23–0.66, p<0.001)

CONCLUSIONS

- ✓ **Endometriosis** is an **independent risk factor** for increased postoperative pain – confirmed by propensity-matched and multivariable regression models.
- ✓ **Central sensitization** likely contributes to **heightened pain susceptibility** in this population.
- ✓ **Current multimodal pain management** strategies are **insufficient** – endometriosis patients report more pain despite greater use of regional anesthesia
- ✓ **Urgent-need** for specialized, **targeted perioperative pain protocols** tailored to endometriosis patients.

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