Comment on "Effect of Epidural Volume Extension Using Low-Dose Sufentanil Combined with Low-Concentration Ropivacaine on Visceral Pain During Cesarean Sections: A Randomized Trial"

To the Editor:

We read with great interest by Jin Wang et al (1) on the article "Effect of epidural volume extension using low-dose sufentanil combined with low-concentration ropivacaine on visceral pain during cesarean sections: A randomized trial." We are grateful to the authors for proposing the use of low-dose sufentanil combined with low-concentration ropivacaine for epidural volume extension to alleviate visceral pain during cesarean sections. We would like to discuss some questions with the authors.

As we all know, visceral pain is common in cesarean sections under combined spinal-epidural anesthesia (CSE). However, according to our clinical observations, the probability of visceral pain during cesarean section surgery was related to the level of CSE. It seemed that during SCE, the higher the level of anesthesia, the lower the probability of visceral pain. However, the authors did not specify the control range of the sensory block levels, only excluding patients with a blockade level above T6, and the allowable error range seems to be relatively large. Furthermore, for pregnant women with higher sensory block levels, there was a greater risk of adverse reactions such as respiratory depression when epidural dilation was administered.

Secondly, the authors did not describe whether experimental measurements were used before epidural injection. Previous study indicated that even if there was no blood or cerebrospinal fluid return during aspiration and the negative pressure test was positive, there was a risk of total spinal anesthesia and local anesthetic poisoning, which might be related to the blockage of blood clots at the tip of the catheter during the aspiration and the opening during the injection (2).

Additionally, the authors did not mention the use of antiemetics in the PCIA protocol or the amount of non-opioid medications used postoperatively, which could affect the incidence of postoperative nausea and vomiting, opioid consumption, and patient satisfaction.

Finally, we found that some patients exhibited a sensory block level higher than T4, which increased the risks of hypotension, respiratory depression, and arrhythmias. The article mentioned that bradycardia was managed with intravenous atropine at a dose of 0.25 mg. However, to our knowledge, low doses of atropine (< 0.5 mg) might actually exacerbate bradycardia. Intravenous administration of esketamine might reduce visceral pain while avoiding the risk of high spinal block associated with epidural volume expansion (EVE).We raised a pilot observational study enrolled 20 participants to explored whether low-dose ketamine injection can reduce visceral pain in patients during cesarean sections. The pain incidence, frequency, and scoring of visceral pain, as well as patient satisfaction was recorded after administering intravenous esketamine at a dose of 0.25 mg/kg. The results showed that the incidence of visceral stretch pain was 10%. Meanwhile both the frequency of visceral pain and the median pain score were 0 (Table 1). The delivery women had a higher satisfaction with an average satisfaction score of 4 (1 = very dissatisfied, 5 = very satisfied) (Table 1). Esketamine, as a safe and effective analgesic in cesarean sections, has the advantage of fewer adverse reactions such as nausea, vomiting, itching, and respiratory depression (3). Intravenous administration of esketamine could be used for patients with a high sensory block level,

Table 1. *Incidence, frequency, visceral pain score, and satisfaction score of visceral pain*

	Esketamine (20)
Visceral pain (%)	2 (10%)
Pain frequency	0 (0.0,0.0)
Visceral pain scores	0 (0.0,0.0)
Satisfaction score	4 (4.0,4.0)

Visceral pain scores: 1 point-no discomfort in the stomach or genital area, no nausea, vomiting, or bulging of the intestines; 2 points-Mild discomfort in the stomach and genital area, no nausea or vomiting; 3 points-There is discomfort in the stomach, pain in the genital area, obvious bulging of the intestines, and even nausea and vomiting. It is necessary to use sedatives for pain relief neurological and psychiatric symptoms: drowsiness, diplopia, nystagmus, dizziness, headache, nightmares, hallucinations, anxiety, and irritability, etc

Satisfaction score (1=very dissatisfied, 2=somewhat dissatisfied, 3=moderately satisfied, 4=somewhat satisfied, 5=very satisfied)

thereby avoiding the risk of total spinal anesthesia caused by epidural drug administration, further alleviating patient suffering and providing a better hospital experience.

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References

1. Thabet TS, Khedr SA. Effect of epidural volume extension using low-dose sufentanil combined with low concentration ropivacaine on visceral pain during cesarean sections: A randomized trial. *Pain Physician* 2024; E1065-E1071.
2. Massoth C, Wenk M. Epidural test dose in obstetric patients: should we still use it? *Curr Opin Anaesthesiol* 2019; 263-267.
3. Xu LL, Wang C. Efficacy and safety of esketamine for supplemental analgesia during elective cesarean delivery: A randomized clinical trial. *JAMA Network Open* 2023; e239321.