

(CASE REPORT)



Obesity and postmenopausal bleeding in vaginal hysterectomy: successful anaesthetic management using fractional combined spinal–epidural anesthesia: A case report

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Abstract

Background: Postmenopausal Bleeding is a concerning gynecological symptom requiring prompt evaluation to exclude malignancy or significant uterine pathology. Obesity further complicates anesthetic management due to altered respiratory mechanics, increased cardiovascular workload, and technical challenges during neuraxial anesthesia.

Case Presentation: A 52-year-old female with a body mass index of 37.5 kg/m², gravida 5 para 3, presented with postmenopausal bleeding and was scheduled for Vaginal Hysterectomy. The patient also had hypertension and type 2 diabetes mellitus. After careful preoperative evaluation, she was classified as ASA Physical Status III. A fractional combined spinal–epidural (CSE) technique was administered using hyperbaric bupivacaine with nalbuphine followed by incremental dosing of bupivacaine with buprenorphine. Adequate sensory blockade was achieved with stable hemodynamics throughout surgery. Estimated blood loss was minimal and the postoperative course was uneventful.

Conclusion: Fractional combined spinal–epidural anesthesia offers controlled sympathetic blockade and stable perioperative hemodynamics in obese patients undergoing gynecological surgery. Careful titration of intrathecal drugs and vigilant monitoring contribute to favorable outcomes.

Keywords: Postmenopausal bleeding; Obesity; Vaginal hysterectomy; Combined spinal–epidural anesthesia; Fractional spinal anesthesia

1. Introduction

Postmenopausal Bleeding is a common indication for gynecological evaluation and may require surgical management depending on the underlying pathology. Vaginal

Obesity is increasingly prevalent and poses significant anesthetic challenges due to:

- Reduced functional residual capacity
- Increased oxygen consumption
- Higher risk of difficult airway management
- Increased incidence of perioperative cardiopulmonary complications

Neuraxial anesthesia offers advantages such as avoidance of airway manipulation and improved postoperative analgesia. However, technical difficulties may arise due to obscured anatomical landmarks in obese patients.

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This case highlights the successful anesthetic management of an obese patient undergoing vaginal hysterectomy using fractional combined spinal–epidural anesthesia.

2. Case Presentation

A 52-year-old female, gravida 5 para 3, presented with complaints of postmenopausal bleeding for one year.

She was admitted for surgical management and scheduled for vaginal hysterectomy.

Patient parameters:

- Age: 52 years
- Height: 150 cm
- Weight: 94 kg
- Body Mass Index: 37.5 kg/m²

Past medical history included:

- Hypertension on treatment
- Type 2 diabetes mellitus on oral hypoglycemic agents

2.1. Clinical examination

On pre-anesthetic evaluation:

- Pulse rate: 82 beats/min
- Blood pressure: 126/68 mmHg
- Respiratory rate: 18/min
- SpO₂: 98% on room air

Systemic examination revealed:

- Cardiovascular system – S1 S2 normal, no murmurs
- Respiratory system – Bilateral normal vesicular breath sounds
- Central nervous system – No neurological deficit
- Abdomen – Soft with obesity

The patient was classified as ASA Physical Status III.

2.2. Investigations

Routine preoperative investigations were within acceptable limits.

- Hemoglobin: acceptable for surgery
- Renal function tests: normal
- Electrolytes: within normal limits

Preoperative optimization included:

- Blood pressure control with amlodipine
 - Glycemic control with metformin
 - Antacid prophylaxis with pantoprazole.
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3. Anesthetic Management

After confirming nil per oral status and written informed consent, the patient was shifted to the operating theatre.

Standard ASA monitoring was instituted including:

- ECG
- Non-invasive blood pressure
- Pulse oximetry
- Capnography
- An 18-gauge intravenous cannula was secured and crystalloid infusion initiated.
- The patient was positioned in sitting position for neuraxial anesthesia.

Under strict aseptic precautions:

The epidural space was identified at L2–L3 interspace using an 18-gauge Tuohy’s needle via the loss-of-resistance technique. The epidural catheter was advanced and secured at 10 cm.

A test dose of 3 mL 2% lignocaine with adrenaline was administered and was negative for intrathecal or intravascular placement.

Subsequently, lumbar puncture was performed at L3–L4 interspace using a 25-gauge Quincke needle.

After confirmation of cerebrospinal fluid flow, fractional spinal anesthesia was administered:

First dose:

- 1.8 mL of 0.5% hyperbaric bupivacaine
- Nalbuphine 1 mg

After 45 seconds:

- 1.6 mL 0.5% hyperbaric bupivacaine
- Buprenorphine 30 µg
- Adequate sensory and motor block was achieved.

4. Intraoperative course

The surgery proceeded uneventfully.

Hemodynamic parameters remained stable:

- Systolic blood pressure: 90–130 mmHg
- Heart rate: 70–90 beats/min
- Oxygen supplementation was provided at 4 L/min via simple face mask.
- Estimated blood loss was approximately 100 mL.

Intravenous fluid therapy included a 300 mL bolus of normal saline, followed by maintenance crystalloid infusion intraoperatively to maintain adequate hemodynamic stability.

Total intraoperative urine output was 180 mL. The duration of surgery was approximately 1 hour 40 minutes. The procedure was completed uneventfully, with no requirement for vasopressor support or blood transfusion.

5. Postoperative Outcome

The patient was shifted to the recovery room in stable condition.

Vital signs:

- BP – 118/68 mmHg
- HR – 80 bpm
- SpO₂ – 98%
- Post-anesthesia recovery was assessed using the ALDRETE score, which was 9/10.

- Postoperative analgesia was provided with epidural top-ups of 0.125% 5cc bupivacaine every 6 hours.

The postoperative period was uneventful with no complications.

6. Discussion

Obesity significantly alters anesthetic physiology, particularly affecting respiratory mechanics and cardiovascular function.

Important anesthetic concerns include:

Airway challenges:

- Excess adipose tissue and increased neck circumference may predispose to difficult ventilation and intubation.

Respiratory changes:

- Obese patients exhibit reduced functional residual capacity and increased oxygen consumption, leading to rapid desaturation.

Neuraxial anesthesia difficulties:

- Identification of anatomical landmarks may be challenging due to subcutaneous fat deposition.

Fractional spinal anesthesia allows gradual sympathetic blockade, thereby minimizing abrupt hypotension that can occur with single-shot spinal anesthesia.

In this case, the combined spinal–epidural technique allowed:

- Controlled intrathecal dosing
- Stable hemodynamics
- Effective postoperative analgesia

The technique proved advantageous for an obese patient undergoing vaginal hysterectomy.

7. Conclusion

Fractional combined spinal–epidural anesthesia can be safely and effectively used in obese patients undergoing vaginal hysterectomy. Careful preoperative evaluation, meticulous neuraxial technique, and titrated intrathecal dosing help maintain hemodynamic stability and contribute to favorable perioperative outcomes.

Compliance with ethical standards

Disclosure of conflict of interest

The authors received no financial support for this work and declare no conflicts of interest.

Statement of ethical approval

As this report describes a single clinical case, formal ethical committee approval was not required.

Statement of informed consent

Written informed consent for publication was obtained from the patient.

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