



Case Report

Enhancing patient experience through shortened hospital stay after Uterine Artery Embolization (UAE) for fibroid

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Abstract

Background: Uterine artery embolization (UAE) is a well-established, minimally invasive treatment for benign uterine conditions such as fibroids and adenomyosis, offering high technical and clinical success with reduced blood loss, shorter hospital stay and faster recovery compared with surgical options. However, post-embolization pain related to ischemic and inflammatory changes remains the principal limitation to establishing UAE as a true day-care procedure. We report the case of a 51-year-old woman with symptomatic uterine fibroids and transfusion-dependent menorrhagia who underwent successful bilateral UAE. Peri-procedural pain control was achieved using a fluoroscopy-guided superior hypogastric nerve block combined with short-duration low-dose fentanyl infusion. The patient was discharged after 30 hrs of observation with good pain control. Follow-up at 7 days demonstrated minimal residual pain and complete devascularization of fibroids on ultrasound. This case highlights the technical aspects of UAE and emphasizes the role of a structured, multimodal pain-management strategy in improving patient comfort, reducing opioid requirements, and facilitating early discharge after UAE.

Keywords: Uterine artery embolization; Superior hypogastric block; Perimenopausal Menorrhagia.

Citation: Amalan Ignatius, Esakki Rajulu, Meenakshi Paramasivan, Faizal, Yogesh Kumar, Lakshmanan. Enhancing patient experience through shortened hospital stay after Uterine Artery Embolization (UAE). *Kauverian Med J.* 2026;3(5):28-31.

Academic Editor: Dr. Venkita S. Suresh

ISSN: 2584-1572 (Online)



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1. Introduction

UAE is well established procedure for the treatment of benign conditions of the uterus like fibroids and adenomyosis [1,2]. As the procedure becomes more refined, recurrence rate is going down [2]. By selectively occluding the uterine arterial supply, UAE induces ischemic infarction of fibroids with high technical and clinical success rates comparable to surgical options [2], UAE has reduced blood loss, shorter hospital stays, and faster recovery. Post-procedural pain remains the principal limiting factor in establishing uter-

ine artery embolization (UAE) as a true day-care procedure. In this case report, we highlight the technical aspects of UAE and detail a structured post-procedural pain-management strategy aimed at improving patient comfort and facilitating early discharge.

2. Case Presentation

A 51-year-old woman with symptomatic uterine fibroids diagnosed in 2019 presented with chronic menorrhagia requiring multiple blood transfusions and repeated intravenous iron sucrose therapy. The patient was keen on uterine preservation and declined surgical management. After multidisciplinary discussion and informed consent, she underwent bilateral uterine artery embolization (UAE) using 500–700 μm polyvinyl alcohol (PVA) particles, in accordance with CIRSE guidelines, which report a clinical success rate of approximately 94%.

Angiography demonstrated hypertrophied bilateral uterine arteries supplying the fibroids, with no contribution from the ovarian arteries or other collateral supply to the myometrium. Complete embolization with angiographic stasis was achieved bilaterally using PVA 550 to 700 microns as shown in fig (1). A superior hypogastric nerve block as shown in fig 2 was performed under fluoroscopic guidance for peri-procedural pain control.

Post-procedurally, the patient experienced peak pelvic pain and vomiting approximately 4 hr. after embolization. Pain was managed with a low-dose fentanyl infusion for 20 hr, along with supportive care. The patient showed progressive symptomatic improvement and was successfully discharged after 30 hr. of admission. As the patient is known diabetic, during the hospital stay patient was put on insulin and converted to oral hypoglycaemics on discharge.

At 7-day outpatient follow-up, the patient reported minimal residual pain controlled with oral analgesics. Follow-up ultrasound demonstrated absence of vascularity within the fibroids.



Fig (1): (A) & (B) show the pre- and post-embolization DSA images of right uterine artery; (C) & (D) show the pre- and post-embolization DSA images of left uterine artery.

3. Discussion

The CIRSE Standards of Practice guidelines affirm that uterine artery embolization (UAE) is a well-established, evidence-based alternative to hysterectomy for women with symptomatic uterine fibroids who wish to preserve the uterus (Level 1 evidence). Long-term outcomes demonstrate equivalent 5-year quality-of-life and comparable rates of major complications between UAE and hysterectomy, although a 15–20% rate of subsequent hysterectomy may be expected during follow-up after initially successful UAE.

In the short term, UAE offers clear advantages, including reduced blood loss, shorter hospital stays, and faster return to normal activities compared with surgical management. Concerns regarding ovarian dysfunction appear to be overestimated, particularly in women younger than 40 years. Based on the evidence, the guidelines recommend that all symptomatic patients with uterine myomas be offered UAE as a treatment option alongside hysterectomy or myomectomy, and advocate for its inclusion in national gynecological treatment guidelines [\[1,3,4\]](#).

Postembolization syndrome (PES) related pain is a common and expected consequence of uterine artery embolization, primarily caused by ischemia-induced inflammation of the myometrium, with pain typically peaking within the first 12–24 hrs after the procedure. Although no single analgesic protocol has proven superior, the literature consistently supports early, pre-emptive multimodal pain management. Effective regimens combine NSAIDs, acetaminophen, and opioids, with NSAIDs forming the cornerstone due to the inflammatory nature of PES. Adjunctive measures such as superior hypogastric nerve block, intra-arterial lidocaine, and peri-procedural dexamethasone further reduce pain intensity, opioid requirements, and length of hospital stay. Overall, a multimodal strategy enables improved patient comfort, facilitates same-day discharge and enhances the feasibility of outpatient UAE, though standardized protocols and randomized trials are still needed [\[5\]](#). In this patient we have given pre and post minimal fentanyl infusion along with intraprocedural superior hypogastric block.

The decision on which procedure to choose should be made based on individual preferences and the physician's expertise [\[2,3\]](#). UAE also has good clinical outcome for patients with adenomyosis.

4. Conclusion

Careful patient selection, meticulous embolization techniques, and proactive pain control are essential to optimize patient comfort, improve satisfaction, and further support the feasibility of day care UAE in routine clinical practice. UAE is an effective alternative to myomectomy and hysterectomy. Many studies show equal benefits between myomectomy and UAE. Finally, it's the patient's choice to choose.

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