

Superior Hypogastric Nerve Blockade to Reduce Pain After Uterine Fibroid Embolization

A Systematic Review



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Introduction

- Pain after uterine fibroid embolization (UFE) is thought to be caused by ischemia in the fibroid, ischemia in the myometrium, and pro-inflammatory response (also called post-embolization syndrome)
- Pain is the most common reason for readmission following UFE
- The superior hypogastric nerve blockade (SHNB) has been suggested as an adjunctive procedure to reduce pain after UFE

Goal: to perform a systematic review of the outcomes following SHNB in patients that underwent UFE for symptomatic uterine fibroids

Table 1. Study Characteristics

First Author (Year)	Study Design	Total Patients
Rasuli (2004)	Clinical trial	139
Drescher (2011)	Prospective study	43
Binkert (2015)	Retrospective study	108
Prashar (2017)	Retrospective study	24
Maratto (2018)	Retrospective study	79
Yoon (2018)	Randomized trial	44
Almazedri (2019)	Clinical trial	29
Keller (2019)	Retrospective study	85
Gorantla (2020)	Retrospective study	98
Park (2020)	Retrospective study	88
Pereira (2020)	Retrospective study	39
Stewart (2020)	Retrospective study	16
Chen (2021)	Retrospective study	23
Zhu (2021)	Randomized trial	40
Malouhi (2021)	Retrospective study	72

Methods

- Databases searched:** PubMed, Cochrane Library, Clinicaltrials.gov, Web of Science, World Health Organization Clinical Trials Database
- Outcomes:** technical success, time to complete embolization and nerve block, time under fluoroscopy, time to recovery, same-day discharge, readmission, pain perception, analgesia consumption, and complications

Table 2. Procedural Outcomes with Superior Hypogastric Nerve Block

Category	Events (%)	Total Patients
Technical success	482 (98.8)	488
Same-day discharge	282 (97.9)	288
No additional analgesia	183 (46.7)	392
Readmissions	22 (6.9)	317
Major complications	2 (0.4)	495
Temporary back pain	6 (10.7)	56
Temporary tachycardia	2 (3.6)	56
Temporary leg sensation	4 (5.6)	72
Vomiting	19 (18.4)	103
Peritonitis	0 (0)	105
Seizure or similar event	2 (1.0)	203
Bleeding	1 (1.0)	98

Table 3. Procedure and Recovery Time with Superior Hypogastric Nerve Block

Category	Average Minutes	Total Patients
Time to complete nerve block	7.7	241
Time under fluoroscopy	13.3	124
Time to complete embolization	106.0	100
Time to recovery	184.6	82

Results

- Included studies:** 15 (Table 1 includes study characteristics)
- Needle repositioning occurred an average of 1.2 times during SHNB
- The average pain score was 3.4 with SHNB versus 4.3 in the control group
- In patients that received SHNB, 46.7% of patients did not require further medication
- Same-day discharge occurred in 97.9% of cases
- Other outcomes are included in Table 2 and Table 3

Discussion

- The current evidence in support of SHNB is based on predominantly low-quality studies
- SHNB appears to be associated with lower pain scores and reduced analgesic consumption
- High technical success rates, low readmission rates, and few complications suggest SHNB to be a safe procedure
- SHNB was associated with increased rates of same-day discharge
- Future high-quality studies are needed to confirm the results in large sample sizes with standardized reporting of key outcomes and using SIR criteria for major and minor complications

