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Original Article

Anaesthesia Section

Comparison of Safety and Efficacy of Unilateral Spinal Anaesthesia and Ultrasound-guided Sciatic Femoral Nerve Block in below Knee Surgery: A Randomised Clinical Study

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ABSTRACT

Introduction: With modern advances, Ultrasonography (USG)-guided regional block techniques have improved nerve blockade with lesser drug usage and maximum safety for patient care. The widely appreciated outpatient surgical care has compelled us to apply the fastest and safest anaesthesia technique. For lower limb surgeries, USG-guided Sciatic Femoral Nerve Block (SFNB) is an emerging alternative to Spinal Anaesthesia (SA).

Aim: To compare the safety and efficacy of both techniques in terms of haemodynamic stability, quality of block, and postoperative analgesia.

Materials and Methods: A randomised double-blind study conducted at GCS Medical College, Hospital, and Research Centre, Ahmedabad, Gujarat, India, on 80 patients aged 18 to 70 years of either sex, with American Society of Anaesthesiology (ASA) Grade 1 to 3, undergoing below-knee surgeries was divided into two groups. Group A received USA with 1.5 mL hyperbaric inj. ropivacaine 0.75%, and Group B received USG-guided SFB with inj. ropivacaine 0.5% 30 mL (15 mL for sciatic nerve and 15 mL for femoral nerve block). Preparation Time (PT), Surgical Anaesthesia Time (SAT), haemodynamic changes, quality of block, Longevity of Anaesthesia (LoA), time of first rescue analgesia, time of spontaneous urination, readiness to discharge, and patient satisfaction were recorded. The statistical analysis was carried out using Statistical Package for Social Sciences version 23.0 (SPSS Inc., Chicago II, USA). The p-value was derived by unpaired t-test and Chi-square test.

Results: PT and SAT were higher in Group B (12.10±2.02 mins and 15.74±1.58 mins) than in Group A (6.15±1.12 mins and 8.23±1.45 mins). LoA time and time to first rescue analgesic were higher in Group B (284.10±54.44 mins and 265.71±33.69 mins) than in Group A (138.75±23.30 mins and 132.40±17.41 mins). Time to first spontaneous urination and readiness to discharge were shorter in Group B (136.42±18.40 mins and 158.39±10.78 mins) than in Group A (162.20±26.54 mins and 181.53±18.18 mins). Haemodynamic stability was excellent in both groups with no significant fluctuation. Motor blockade of Bromage 3 grade was achieved in 40 and 38 patients in Group A and B, respectively. The development of VAS score >3 was faster in Group A than in Group B (35 versus 2) at the end of three hours. No adverse events were observed in any patient.

Conclusion: USG-guided SFB offers a safe and efficient alternative to Unilateral SA (USA) with satisfactory blockage, stable haemodynamics, and better postoperative analgesia for below-knee surgeries.

Keywords: Analgesia, Haemodynamics, Pain, Peripheral nerve block, Ropivacaine

INTRODUCTION

The increasing popularity of minimally invasive surgical techniques, fast-tracking of elective cases, and daycare surgeries have compelled an anaesthesiologist to develop better and newer modes of anaesthesia that prioritise safety, efficacy of techniques, and early resumption of daily activities after both major and minor procedures. With the development of innovative techniques such as Peripheral Nerve Stimulator (PNBs) and ultrasound, the scope of anaesthesia has shifted from general and neuraxial anaesthesia to PNBs. These techniques require less preoperative optimisation and reduce the incidence of cardiorespiratory complications [1]. Below-knee surgeries have increasingly become daycare procedures due to the effectiveness of anaesthesia techniques, allowing rapid and safe discharge. Regional anaesthesia serves as an alternative to general anaesthesia for such surgeries. Both PNBs and SA provide adequate anaesthesia, superior postoperative analgesia, and patient satisfaction compared to general anaesthesia. Moreover, they are minimally invasive, involve no airway manipulation, and require fewer resources [2,3].

USA is particularly used for unilateral lower limb surgeries to provide optimal surgical conditions with fewer haemodynamic disturbances compared to complete bilateral SA [4]. SFB can also be used for unilateral lower limb surgeries, but its complexity and larger drug volume usage have made it less popular [5]. However, with the assistance of USG, SFB has become more accurate, safe, less time-consuming, and easier to perform [5-7]. PNBs have been successfully utilised in patients with critical co-morbidities who cannot tolerate even slight haemodynamic alterations, offering a safe alternative to avoid the side-effects associated with SA [8].

The present study aims to compare the safety and efficacy of USA and USG-guided SFB in terms of haemodynamic stability, quality of block, and postoperative analgesia for below-knee surgical cases.

MATERIALS AND METHODS

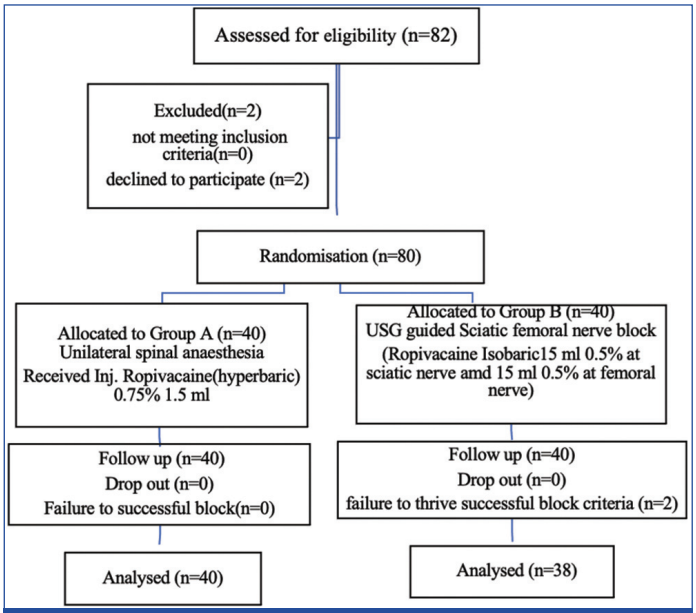
This randomised clinical double-blinded interventional parallel-arm study was approved by the Institutional Ethics Committee (IEC) (GCSMC/EC/Research project/Approved/2021/302) and conducted in accordance with the principles of the Declaration of Helsinki from

May 2022 to December 2022 at the Department of Anaesthesiology, GCS Medical College, Hospital, and Research Center, Ahmedabad, Gujarat, India. The study has been registered with Clinical Trials Registry-India (CTRI) in April 2022 (CTRI/2022/04/041597).

Inclusion criteria: After obtaining written informed consent from all participants, a total of 80 patients with ASA grade 1 to 3, between the ages of 18 to 70 years, of either sex, who were scheduled for elective below-knee surgeries, were included in the study.

Exclusion criteria: Patients with a bleeding disorders, allergies to Local Anaesthetic (LA) agents, acute infections, neurological diseases, morbid obesity, a history of spine surgery, seizures, psychiatric diseases, and cardiac or respiratory diseases were excluded from the study.

Sample size: The sample size was calculated using the "Sealed Envelope Ltd., Power calculator for binary outcome non inferiority trial" software. Based on the observed success rate of 99% for USA and 95% for USG-guided SFB block in our institute practice, a non inferiority limit of 14, a power of 80%, and a significance level (alpha) of 5%, the sample size for each group was calculated as 36, resulting in a total of 72 participants. Considering a 10% dropout rate, 80 patients were selected. [Table/Fig-1] depicts the CONSORT flow diagram.



[Table/Fig-1]: CONSORT flow diagram.

Below-knee surgeries include a wide range of procedures such as fixations of bone fractures involving the tibia, fibula, and foot bones, surgeries on the ankle joint and tarsal-metatarsal joints, as well as debridement and tendon repair.

The enrolled 80 patients were randomly divided into two groups:

Group A: n=40, patients who received USA with hyperbaric inj. ropivacaine 0.75% 1.5 ml [9]. After proper positioning, i.e., the patient in the knee-chest lateral position with the operative site kept dependent, under sterile precautions, a 25 G Quincke needle was introduced into the L2-L3 or L3-L4 space. With the CSF flow, the drug was given slowly with the hub directing downwards. Then, the needle was removed, and the patient was kept in a lateral position with extended legs for 15 minutes.

Group B: n=40, patients who received USG-guided SFB with inj. ropivacaine 0.5% 30 mL (15 mL for sciatic nerve block and 15 mL for femoral nerve block) [10]. For the femoral nerve block, the patient was kept in a supine position with the leg extended. Under sterile precautions and local anaesthesia at the needle insertion site, the femoral nerve block was performed by introducing a 23 G Quincke needle near the inguinal region using USG guidance with a linear probe. For the sciatic nerve block, the patient was positioned in a lateral decubitus position (operative side-up) with the normal leg kept straight and the hip joint of the diseased leg flexed at 40°. After identifying the sciatic nerve between the ischial tuberosity and greater trochanter of the femur, local anaesthesia was given at the needle site under sterile precautions. Using USG guidance with a curvilinear probe, a 23 G Quincke needle was introduced, and the drug was delivered in the previously mentioned dosage. The patient was immediately placed in a supine position after the block.

Computer-generated random numbers were used for group assignments, which were placed in sequentially numbered opaque envelopes. The envelope was opened just before the procedure by the anesthesiologist performing the procedure. The observer (another anesthesiologist) and patients were blinded to the group and procedure performed.

A preoperative evaluation was conducted one day prior to surgery. After obtaining written informed consent, the patient was taken to the operating room, and an intravenous line and standard monitors such as electrocardiogram, non invasive blood pressure, and pulse oximetry were attached. Fluid therapy was initiated, and premedication with inj. glycopyrrolate 0.2 mg and inj. midazolam 0.04 mg/kg was administered. The anaesthetic technique was performed with all sterile precautions and in the dosage mentioned by two equally experienced anaesthesiologists. The PT was recorded as the time from the preparation of the position for the block to the delivery of the LA agent.

Patients were continuously monitored for heart rate, blood pressure, and SpO_2. These parameters were recorded every five minutes for the initial 15 minutes, then every 15 minutes for two hours, and subsequently at two-hour intervals for 10 hours. Satisfactory blockage was defined based on fixed criteria. For Group A (USA), complete sensory and motor blockade upto the Thoracic 12 dermatome was desired. For Group B (USG-guided SFB), complete sensory and motor blockade in the distribution of the sciatic and femoral nerves, with immobility of the knee and ankle joint, was desired.

Sensory block was assessed using a pinprick at the blockage site, while motor blockage was assessed using a modified Bromage scale (0 indicating free movement and 3 indicating complete block). Apart from premedication and sedation with inj. midazolam, any addition of an analgesic agent or the need for general anaesthesia, failure to complete surgery prior to regression of blockage, or patient discomfort were considered to be failures of the anaesthesia method.

SAT was assessed as the time from the introduction of the LA agent to the successful completion of the desired block, as mentioned above. Surgical Duration (SD) was noted as the time from surgical incision to complete dressing of the wound. LoA was recorded as the time from LA injection to the complete regression of motor and sensory effects. Pain was assessed using the Visual Analog Scale (VAS) every hour for upto eight hours postoperatively. The first rescue analgesia, inj. diclofenac, was introduced when the VAS score (ranging from 0 for no pain to 10 for worst pain) rose above three. After delivering the rescue analgesic, the VAS score was not considered for the study aim and was not recorded in the datasheet. The time to the first spontaneous urination was also noted, measured from the introduction of the block to spontaneous urination.

Any complications such as nausea, vomiting, dizziness, confusion, chest pain, or paraesthesia at the blockage site were noted. Data

on patient satisfaction, including comfort during the anaesthesia technique, operative experience, perioperative pain, any other complaints, and preference for the same technique, were collected using an objective-based questionnaire. Readiness for discharge was determined using the modified Postanaesthetic Discharge Scoring (PADS) system, which includes vital signs, activity and mental status, pain, nausea and/or vomiting, surgical bleeding, and oral intake and output, with a total score of 10. A score of ≥9 was considered ready for discharge. The time for readiness to discharge is defined as the end of surgery to a PADS score of ≥9 [11].

STATISTICAL ANALYSIS

Data were recorded in Microsoft Excel software. The statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) 23 (SPSS Inc., Chicago, IL, USA). Group comparisons were made using Unpaired t-tests or Chi-square tests for normally or non normally distributed continuous variables, respectively. Continuous data were presented as mean and standard deviation, while categorical variables were described as frequencies and compared using Chi-square tests. All statistical tests were performed at a significance level of a p-value <0.05.

RESULTS

A total of 80 patients scheduled to undergo planned below-knee surgery were randomly allocated to two groups: Group A and Group B, with 40 patients in each group. No significant differences were observed between the two groups in terms of demographic and ASA physical status parameters [Table/Fig-2].

Parameters	Group A (n=40)	Group B (n=40)	p-value
Age (years)	52.50±16.18	49.75±15.54	0.44
Sex			
Male	26	22	0.83
Female	14	18	
Weight (kg)	67.38±9.76	69.02±10.41	0.053
ASA Grade-1	24	22	0.55
Grade-2	11	14	
Grade-3	5	4	

[Table/Fig-2]: Demographic data.
ASA: American society of anaesthesiology. Age and Weight are described as mean and standard deviation and analysed with unpaired t-test. Sex and ASA grade were expressed in numbers and analysed with a chi-square test. A p-value <0.05 is considered a statistically significant difference

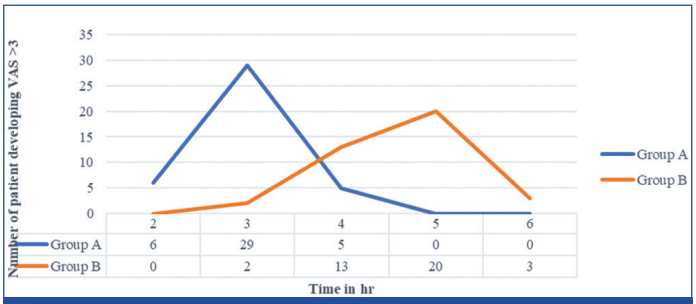
Two patients from Group B required additional sedation with inj. fentanyl during surgical duration and were excluded from the analysis. All assessed data were calculated as mean and standard deviation [Table/Fig-3]. The mean time for peripheral nerve block onset and SAT were shorter in Group A compared to Group B and were found to be significant.

Parameters	Group A (n=40) (Mean±SD)	Group B (n=38) (Mean±SD)	p-value
Preparation time (PT), mins	6.15±1.12	12.10±2.02	<0.0001
Sensory blockage time	4.07±0.52	10.78±3.69	<0.0001
Surgical Anaesthesia Time (SAT), mins	8.23±1.45	15.74±1.58	<0.0001
Surgical Duration (SD), mins	40.90±12.14	45.06±8.16	0.0813
Longevity of Anaesthesia (LoA), mins	138.75±23.30	284.10±54.44	<0.0001
Time to complete Motor regression, mins	138.75±23.30	145.68±21.89	0.1803
Time to first spontaneous urination, mins	162.20±26.54	136.42±18.40	<0.0001
Time to first analgesic need, mins	132.40±17.41	265.71±33.69	<0.0001
Time to readiness to discharge, mins	181.53±18.18	158.39±10.78	<0.0001

[Table/Fig-3]: Perioperative data.
SD: Standard deviation. All data were analysed with unpaired t test. p-value <0.05 is considered a statistically significant difference

The mean time to achieve complete motor blockage was faster in Group A (8 minutes versus 15 minutes), while the time for complete regression of motor blockage was the same in both groups (138 minutes versus 145 minutes) [Table/Fig-3]. All patients in both Group A and Group B achieved a grade 3 motor block. Two patients in Group B experienced discomfort at the hip joint during surgery despite having complete sensory and motor blockage. However, low-dose fentanyl resolved their complaints.

The duration of analgesia was longer in Group B compared to Group A, and the differences were significant. VAS scores were assessed in patients every hour until rescue analgesics were administered [Table/Fig-4]. The mean VAS score at 2, 3, and 4 hours postoperatively was higher in Group A compared to Group B and was found to be significant [Table/Fig-5]. The development of a VAS score >3 occurred faster in Group A compared to Group B (35 patients versus 2 patients) by the end of the third hour. All patients in Group A required a rescue dose of analgesic by the fourth hour, whereas in Group B, all patients received rescue analgesics by the seventh hour. The time to first spontaneous urination was significantly shorter in Group B compared to Group A. The time to readiness for discharge was longer in Group A compared to Group B.



[Table/Fig-4]: Number of patients developing VAS score >3 postoperatively.

VAS	Group A (Mean±SD)	Group B (Mean±SD)	p-value
VAS Score at 2 h	1.82±0.63	0.97±0.21	<0.0001
VAS Score at 3 h	2.90±0.71	1.34±0.41	<0.0001
VAS score at 4 h	3.01±0.49	2.19±0.68	0.0174

[Table/Fig-5]: Mean VAS score at regular intervals.
Unpaired t-test applied. p-value <0.05 is considered statistically significant

Haemodynamic variables, including pulse and non invasive blood pressure, were observed throughout the perioperative phase at regular intervals, and variability was found to be <20% from baseline. All patients remained stable during the course [Table/Fig-6,7]. Oxygen saturation remained normal and unchanged throughout the perioperative period in both groups [Table/Fig-7]. Three patients in Group A developed bilateral nerve blocks. No patients experienced any complications. Based on the study of lower limb surgery, all patients were encouraged and observed for assistive ambulation during discharge from the postoperative recovery area, but surgical restrictions prevented us from including this data. Not all patients were discharged on the same day, depending on the surgical demand for wound site observation. These patients were assessed for 10 hours in the hospital, while those who were discharged were assessed via telephonic video calls every two hours for upto 10 hours.

Haemodynamic parameters						
	Heart rate (beats/min)			Systolic blood pressure (mmHg)		
	Group A	Group B		Group A	Group B	
Time	Mean±SD	Mean±SD	p-value	Mean±SD	Mean±SD	p-value
Baseline	78.8±13.7	75.3±10.8	0.2156	117.9±10.2	122.1±12.6	0.1090
5 mins	79±15.6	77.6±9.5	0.6357	116.1±13	118.9±10.3	0.2967
10 mins	83±15.2	79.7±8.4	0.2424	110.9±13	112.7±11.2	0.5153
15 mins	78.4±17.5	75.7±10.3	0.4120	112.3±9.4	108.4±13	0.1317
30 mins	76.5±12.1	74.6±13	0.5058	110.8±8.9	111.4±10.7	0.7881
45 mins	75.3±11.6	74.2±12	0.6818	110.7±10.4	113.1±11.2	0.3296
1 h	75.1±8.1	72.3±12.4	0.2391	112.4±11.2	112.8±9.8	0.8674
2 h	75.5±9.2	73.1±8.3	0.2310	113.1±8.7	116.2±8.8	0.1618
4 h	74.8±8.8	74.9±9.6	0.961	114.3±9.2	115.2±8.9	0.6621
6 h	76.5±10.9	75.3±8.3	0.5874	116.3±10.1	118.4±9.2	0.3409
8 h	76.4±9.4	74.6±9.7	0.4079	120.8±8.9	121.7±9.3	0.6618

[Table/Fig-6]: Haemodynamic parameters perioperatively.
Heart rate and systolic blood pressure are described as mean and SD and analysed with unpaired t-test. p-value <0.05 is considered as a statistically significant

	Diastolic blood pressure (mmHg)			SpO_2 (%)		
	Group A	Group B		Group A	Group B	
Time	Mean±SD	Mean±SD	p-value	Mean±SD	Mean±SD	p-value
Baseline	78.3±7.6	77.1±8.8	0.5731	97.75±0.90	97.42±0.73	0.0802
5 mins	74.6±8.2	74.3±7.6	0.7746	97.95±0.85	98.04±0.68	0.6083
10 mins	73.7±9.2	74.8±8.5	0.5855	97.80±0.85	98.06±0.83	0.1760
15 mins	76.6±8.6	73.9±7.3	0.1401	98.25±0.60	97.98±0.87	0.1132
30 mins	74.4±8.2	72.5±6.4	0.2592	98.00±0.80	97.66±0.91	0.0833
45 mins	75.2±7.4	73.4±7.1	0.2769	97.85±0.85	98.32±0.84	0.0164
1 h	74.5±8.1	74.2±8.6	0.8744	98.00±0.60	97.86±0.92	0.4262
2 h	77.1±7.8	76.2±7.9	0.6142	98.25±0.75	98.24±0.56	0.1492
4 h	76.7±6.9	75.3±7.6	0.3966	98.25±0.60	97.88±0.90	0.0350
6 h	77.2±7.5	76.8±8.1	0.8215	98.75±0.70	98.36±0.68	0.0148
8 h	76.6±8.4	75.4±7.8	0.5158	97.75±0.85	98.14±0.75	0.0352

[Table/Fig-7]: Diastolic blood pressure and SpO_2 perioperatively.
Data were analysed using an unpaired t-test. p-value <0.05 is considered to be significant

Patient satisfaction was comparable with both methods. All patients described their operative experience as good, with no discomfort, good pain relief, and no recorded complications. All patients preferred the same anaesthesia method in the future. Patients in Group B returned to oral intake earlier than those in Group A.

DISCUSSION

Unilateral Spinal Anaesthesia (USA) is a well-known and widely established anaesthesia technique for unilateral lower limb surgeries [12]. Sciatic Femoral Nerve Block (SFB) on the operative site is a known but less popular method for the conduction of lower limb surgeries. Initially, SFB had limitations such as high failure rates, the use of large drug volumes, more skin pricks for patients, and time consumption. However, with the guidance of USG, these limitations have been greatly addressed [5,6]. The addition of safer local anaesthetic agents for the blockage has made this technique more widely accepted [5,8]. Previous studies have been conducted to establish SFB as a safe and better alternative to USA in day care surgeries, using different methods of block administration or different local anaesthetics [13-16]. The present study was conducted using USG guidance and ropivacaine.

Complete sensory and motor blockage were achieved in 100% of patients in both groups. A study conducted by Palkhiwala and Bhatt PT, on USG-guided sciatic femoral block showed a success rate of only 92% [17]. The time to develop sensory blockage with USFB was 10.78±3.69 minutes, and motor blockage was achieved in 15.74±1.58 minutes, which was consistent with a study by Wani SA et al., where the times were 8.04±6.77 and 14.41±3.11 minutes, respectively [18].

Both methods demonstrated great haemodynamic stability by limiting low spinal blockage in the case of USG and only blocking peripheral nerves in SFB. Heart rate and SBP remained unchanged and were not significant. Oxygen saturation in both groups of patients remained normal and unchanged. These findings align with a study conducted by Saber AM et al., in 2019 [19]. A study by Pattajoshi B et al., showed more haemodynamic fluctuations with SA compared to USFB, which may be due to bilateral lower limb blockage and the use of bupivacaine in SA [13].

The present study revealed that USG-guided SFB had a longer onset time and SAT compared to USG. However, the time consumed for fixing the unilateral block by keeping the patient in lateral decubitus position for 15 minutes in the later technique led to an equal delay in surgical incision for both methods. The reduced time required for USG-guided SFB is attributed to better knowledge and familiarity with the USG machine.

The duration of action (LoA) in the present study was observed to be longer in the SFB group compared to the USA group. The early return of motor blockage compared to sensory blockage in the SFB group allowed for early ambulation, providing postoperative analgesia and patient comfort. No residual weakness was observed with the SFB block, proving its safety in day care surgery.

In terms of the need for first-rescue analgesia, there was a significant difference between both groups (284.10 minutes versus 138.75 minutes). A study by Saleh AA et al., found similar results of 347.2 minutes versus 182.63 minutes with bupivacaine for USFB versus USA, respectively [14]. Complete recovery from a sympathetic block in the SA group leads to an early need for rescue analgesics. It was observed that the development of VAS score from 0 to 3 was relatively slow with SFB, while it was rapid with USA. This finding was due to the slow absorption of drugs from the perineural sheath in nerve blocks compared to neuraxial blocks. A study by Khanna S et al., showed good postoperative analgesia with USFB and a low requirement for rescue analgesics for upto 48 hours [15].

In a study conducted by Karaduman Y et al., in Turkey, a total of 60 patients aged 18-65 years were randomly divided into two groups, with 30 receiving SA and 30 receiving SFNB. The duration of the intervention, time to onset of sensory and motor blockage, time to start of surgery, motor block reversal time, and time to first rescue analgesic were longer in the SFNB group. Fewer patients in the SFNB group required rescue analgesia in the first 24 hours compared to the SA group [20].

Urinary retention after spinal blockage is a cause for prolonged hospital stay. With SFB, urinary retention is rare, so the time to first spontaneous urination is short (136.4 minutes versus 162.2 minutes), which was in agreement with a study by Davarci I et al., in 2013. It was observed that ambulation is faster than voiding of urine in spinal anaesthesia, making it the last factor to return, fulfilling the criteria for readiness to discharge [16].

No side-effects such as nausea, vomiting, hypotension, headache, or any neurological or cardiovascular complications were found in patients receiving USFB or USA, in contrast to a study by Pattajoshi B et al., where 64.9% of patients in the SA group experienced some complications such as nausea, vomiting (51.4%), and headache (16.2%), while no complications were observed in the USFB group [13].

Adequate pain control is crucial for facilitating recovery by enabling early ambulation, faster return of bowel and bladder motility, increasing patient satisfaction, and reducing the side-effects caused by systemic opioids or NSAIDs. In addition to providing analgesia, stable vitals, complete awareness, freedom from nausea/vomiting, and the ability to resume oral intake were found to be superior in SFB compared to USA. Therefore, USG-guided SFB has advantages over USA in terms of postoperative analgesia, patient satisfaction, and readiness for discharge.

A meta-analysis conducted by Zhang L et al., indicates that SFB can lead to faster recovery in outpatient surgeries, and both techniques have comparable high levels of patient satisfaction [21].

Recently, the combination of nerve block using both Peripheral Nerve Stimulation (PNS) and USG methods has been considered a better practice. This approach has been shown to result in successful blocks with minimal incidence of local anaesthetic systemic toxicity. In this study, the concentration and dosage of the drug were optimised, and no adverse events were noted. Additionally, good familiarity with the USG machine led to a high success rate for the nerve block. Two patients experienced discomfort at the hip joint with intraoperative limb movement, which led us to consider the sparing effect of the obturator and lateral cutaneous nerve of the thigh with SFB.

Limitation(s)

A limitation of this study was the exclusion of obese patients and those with ASA grade >3, which may have limited the assessment of the efficacy and safety of the study. Further research is needed to expand this study to include patients with compromised cardiorespiratory conditions, emergency cases, and all lower limb surgeries in order to evaluate the safety and efficacy of SFB with PNS and USG methods. Additionally, comparing ropivacaine and other local anesthetic agents may provide better outcomes in day care surgeries.

CONCLUSION(S)

With the increasing use of USG machines, the quality of peripheral nerve blockade has improved, and the time required for the procedure has significantly reduced, providing greater safety and comfort to patients. USG-guided SFB blocks have successfully achieved complete sensory and motor blockade in all patients, resulting in a good surgical plane. Haemodynamic stability has also been observed to be excellent with USFB. Postoperative pain scores were higher in the USA group compared to the USFB group. SFB has proven to be an ideal technique for fast-track surgery, as it leads to a shorter time to first urination and meets the criteria for PADS (post-anaesthetic discharge scoring system). Considering these findings, USG-guided SFB is a better alternative to USA for below-knee surgeries.

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