



FASCIA ILIACA COMPARTMENT BLOCK VS INTRAVENOUS FENTANYL AS AN ANALGESIC TECHNIQUE BEFORE POSITIONING FOR SPINAL ANAESTHESIA IN PATIENTS UNDERGOING SURGERY FOR FEMUR FRACTURES- A RANDOMIZED TRIAL

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ABSTRACT

Study objective: Pain arising from femur fractures is of severe nature. Surgery for fixation of femoral fractures may be done under spinal anesthesia. We conducted this study to compare the analgesic efficacy of fascia iliaca compartment block (FICB) and intravenous fentanyl (IVF) before positioning for spinal anesthesia. **Design:** Randomized controlled trial. **Setting:** Operating room. **Patients and interventions:** Sixty patients aged 25 to 75 years, with American Society of Anesthesiologists status I to II, undergoing surgery for femur fracture were chosen for the study and randomized into 2 groups. Patients in group FICB received the block with 30 mL of 0.25% ropivacaine 15 minutes before the subarachnoid block. Patients in group IVF received intravenous fentanyl at 1 µg/kg body. **Spinal:** All the patients received spinal anaesthesia with 0.3mg/kg of 0.5% hyperbaric bupivacaine. **Measurements:** Preprocedural and postprocedural parameters such as visual analog scale (VAS) scores, sitting angle, quality of positioning, and time to perform the spinal were recorded. **Main results:** Preprocedural VAS scores were similar in both groups. The "VAS after" was 24.72 ± 15.70 mm in group FICB vs 61.22 ± 18.18 mm in group IVF (P = .01). The drop in VAS scores was significantly more in the FICB group. Postoperative analgesic requirement was lesser in group FICB. This work is attributed to the Department of Anesthesiology.

KEYWORDS :

INTRODUCTION -

Fracture of the femur occurs most commonly after trauma or trivial fall especially in the elderly. Surgery for fracture femur may be done under regional or general anesthesia.

Femoral fracture is the most painful bone injury and performing spinal anesthesia (either the sitting or lateral positioning) is extremely challenging due to very poor positioning unless we have a very good mode of analgesia. Intravenous strong opioids and nerve blocks are also being used. In advent of the same the present study is aimed to compare the analgesic efficacy of fascia iliaca compartment block (fichb) and intravenous fentanyl (ivf) for positioning before spinal anaesthesia.

Aims And Objectives

- To compare the pain scores during positioning for spinal anaesthesia using visual analog scale
- To compare the quality of positioning using the quality score

0 = Poor hip flexion
1 = Satisfactory hip flexion
2 = Good hip flexion
3 = Optimal hip flexion.s

MATERIALS AND METHODS -

Study design - RANDOMIZED TRIAL

Selection of cases - Patients willing to give consent and fulfilling the following

inclusion criteria-

- Age between 18-65yrs.
- ASA grade I-II.
- Patients with proximal femur fractures posted for elective surgery under subarachnoid block.
- Patients who have given an informed consent.

Exclusion criteria

- Known allergies to local anesthetics and opioid
- Open wound or infection at the site of block
- ASA grade III-IV
- Patients contraindication to spinal anaesthesia.

Sample size - Total sample size was 60 with 30 participants each in group A and group B

Method of collection of data - Patients undergoing elective femur surgery and fulfilling the inclusion criteria, after obtaining clearance from the review board.

Methodology

Detailed pre anaesthetic check up was performed on the day before surgery. Routine investigations were carried out in all the patients.

60 patients undergoing elective femur surgery and fulfilling the inclusion criteria were divided randomly in to two groups

Preoperative VAS score was recorded.

group A- Fascia Iliaca Compartment Block (N=30): Received the block with 30ml 0.25% Ropivacaine 15mins before the subarachnoid block group B-I/V Fentanyl (N=30): Received intravenous fentanyl at 1 mcg/kg body weight 5mins before subarachnoid block

Standard monitoring which included non invasive blood pressure, electrocardiogram and pulse oximetry were used throughout the procedure

All the patients received spinal anaesthesia with 0.3mg/ kg of 0.5% hyperbaric bupivacaine.

Intravenous fentanyl related side effects like hypotension, bradycardia, nausea, vomiting and respiratory depression were watched out for. Intraoperative vitals were maintained and monitored.

Statistical Analysis

Data were analyzed using SPSS 17.0. All quantitative variables were summarized in terms of descriptive statistics such as mean and SD and median with range. Paired sample t tests and Wilcoxon signed rank test were used to compare the variables "VAS before" and "VAS after" and "SA before" and "SA after." The Student t test and Mann-Whitney U test were

used to compare the different mean values between the 2 groups. Two-way analysis of variance was used to determine whether there was statistically significant difference among the 7 time points in the hemodynamic parameters between the groups. P < 0.05 was considered statistically significant.

OBSERVATION & RESULTS

There were no significant differences in demographic data (Table 2). All patients in both groups had either intertrochanteric fracture or neck of femur fractures with similar distribution between groups. Types of surgeries performed in both groups were similar in distribution.

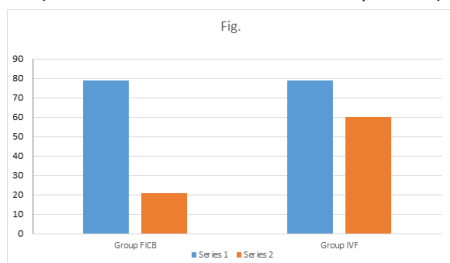
Mean VAS before procedure was comparable in both groups.

The mean "VAS before" was 78.0 ± 12.15 mm in FICB group and 78.30 ± 12.62 mm in IVF group.

The mean "VAS after" in FICB group was 24.72 ± 15.70 mm vs 61.22 ± 18.18 mm in IVF group (Fig.).

However, the drop in VAS scores after procedure was significantly higher in FICB group in comparison to IVF group (Table 1)

The drop in VAS scores was obtained by calculating the difference in the mean VAS scores before and after the procedure (53.33 ± 16.47 vs 21.12 ± 16.43 mm; P = .01).



Comparison of measured parameters between the groups – drop in VAS score (Table 1)

	Group FICB (n=30)	Group IVF (n=30)	
Drop in VAS score	53.33+/-16.47	21.12+/-16.49	.01

Demographic details in the two group (Table 2).

Demographic Data	FICB group	IVF group	P
Age (Year)	60.43+/- 15.91	58.83+/-14.79	0.68
Sex	12/18	16/14	0.14
ASA Status			
ASA 1,	17	17	1
ASA 2	13	13	

DISCUSSION -

The present study showed that peripheral nerve blocks- Fascia iliaca compartment block (FICB) was more effective in reducing pain during positioning, shortening time to perform subarachnoid block, and increase the quality of positioning than intravenous fentanyl.

The present study shows that FICB was effective in reducing pain during positioning than IVF which is comparable with recent studies done by Madabushi R et al. and M Bantie et al.

In the present study quality of positioning was statistically higher in patients with FICB 2 than IVF which is also comparable to previous studies by Purohit et al, Madabushi et al. and Hsu et al.

Nonetheless, it is essential to carry out further high power ultrasound-guided studies.

CONCLUSION

Preoperative Fascia iliaca compartment block (FICB) reduce pain score during positioning, shorten time to perform spinal anesthesia, better patient positioning, and higher patient acceptance in a patient undergoing elective femoral bone fracture surgery.

We recommend Fascia iliaca compartment block for spinal anesthesia positioning in a patient undergoing femoral bone fracture surgery.

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