

Unilateral Fascia Iliaca Block (FIB) for Post-operative Analgesia in Fracture Neck of Femur Surgery; Comparison with Standard Post-operative Analgesia

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ABSTRACT

Aim: To compare the comfort and post-operative pain in patients undergoing fascia iliaca block with standard post-operative analgesia in fracture neck of femur surgery.

Method: 100 patients with ASA class P₁, P₂ and P₃ undergoing surgery were included in this study. Fascia iliaca block (FIB) was applied at the end of surgery. All surgeries were performed under spinal anaesthesia. In group A 50 patients received FIB along with standard postoperative analgesia and in group B, 50 patients received only standard post-operative analgesia with injection diclofenac sodium 75mg IM, 8 hourly and rescue analgesia with 2mg injection nalbuphine according to patient complaint of pain.

Results: The degree of pain was significantly lower in patients receiving FIB and they were more comfortable after surgery and quantity of injection nalbuphine rescue analgesia was significantly reduced, compared with patients receiving standard post-operative analgesia only.

Conclusion: FIB provides effective post operative analgesia and is associated with markedly reduced analgesia consumption and patient remains more comfortable and satisfied after surgery.

Keywords: Nerve blocks, postoperative analgesia, fascia iliaca block, spinal anaesthesia.

INTRODUCTION

Post-operative surgical pain is a nightmare for any patient scheduled for surgery. The aims of post-operative pain treatment are to provide subjective comfort, inhibits nociceptive impulses, and blunt the neuro-endocrine response to pain, thus enhancing the restoration of function¹. Now- a- days peripheral nerve blocks have become a popular method for treatment of pain after lower extremity surgical procedures². Fascia iliaca block was initially described by Dalens B et al on children using a landmark technique. It is a low-skill, inexpensive method to provide peri-operative analgesia in patients with painful conditions affecting the thigh, the hip joint and femur³. Fascia iliaca block is associated with lower incidence of post-operative hemodynamic complications⁴. Fascia iliaca block provide adequate analgesia in most cases⁵.

It is clinically safe and efficient⁶. It effectively reduces the severity of emergence agitation and post-operative pain during the immediate post-operative period⁷. It also provides significant benefit in the pre-operative period and allows patients to sit up more comfortably while they await surgery⁸. It offers a very good, efficient and safe alternative in the treatment of pain in patients with fracture neck of femur in emergency⁹. It is effective for providing pain

control for at least 24 hours with single short¹⁰. Continuous fascia iliaca block through the catheter also provide reliable post-operative pain relief¹¹. Fascia iliaca block can also be applied with the help of ultrasound guided needle and ultrasound guided fascia iliaca block provide excellent analgesia without complications¹².

MATERIAL AND METHODS

After the approval of study from hospital ethics committee 100, patients undergoing surgery for fracture neck of femur were included and divided into two equal groups A and B by randomization. We used flipping a coin technique for each study participant and assign the person to group A if the coin is head and to group B if the coin is tail. Each group comprised 50 patients. It was randomized control trial (RCT). Sample size of 100 cases (50 in each group) was calculated with 95% confidence level, 80% power of test and taking and expected mean + S. D. of mean pain score in both groups.

Group A patients received fascia iliaca block along standard post-operative analgesia and group B patients received only standard postoperative analgesia (Diclofenac sodium 75mg IM X 8 hourly). Both male and female patients from 60-80kg weight with ASA class P₁, P₂ and P₃ were included in the study. Patients below 60kg and above 85kg having contraindication to regional anaesthesia with bupivacaine were excluded from the study.

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Technique: All patients underwent spinal anaesthesia with 25G needle at L 4-5 level with midline technique with hyperbaric bupivacaine 2ml. Both group received stander II monitoring and judicious fluid (Ringer) to cover peri-operative fluid deficit. Oxygen 3 lit/mint intra operative was given with face mask. Both groups were given post-operative analgesia with 75mg intramuscular diclofenac sodium 8 hourly routinely and 2mg nalbuphine intravenous as rescue analgesia according to severity of pain.

In group A fascia iliaca block was given by toughy needle at the end of surgery on the side of operation with bupivacaine .25% and 5ml/kg body wt.

Assessment of postoperative analgesia: An observer blinded of the block administered to the patient assessed the degree of pain experienced by each patient using Numeric rating scale (NRS-II)¹³. Patients were monitored to whatever quantity of rescue analgesic they settled to. Observation was carried out till 24 hours post operatively at 3 hours intervals. Total quantity of nalbuphine rescue analgesia was also noted.

Statistical analysis: Quantitative variables in two groups were compared using student's t test. Qualitative variables were compared using Chi square test. SPSS-12 was used for statistical analysis.

RESULTS

In group A mean age of patients was 52.48 ± 18.05 and in group B it was 34.20±9.39. In group A male to female ratio was 1.94: 1 and in group B it was 2.57: 1. Regarding patient comfort after surgery in group A more patients were comfortable as compare to group B and P value was significant. Similarly frequency of first analgesia requirement after surgery in group A was 12.28±4.77 (Hours) and it was better than group B 2.16±1.05 (Hours) and P value was significant. Similarly number of rescue analgesia was more in group B as compare to group A.

Table 1: Age distribution of patients (n=100)

Age in years	Group A	Group B
20 – 40	20(40%)	37(74%)
41 – 60	12(24%)	13(26%)
61 – 80	16(32%)	0
>80	2(4%)	0
Mean±SD	52.48±18.05	34.20±9.39

Table 2: Sex distribution of patients (n=100)

Gender	Group A	Group B
Male	33(66%)	36(72%)
Female	17(34%)	14(28%)
Male to female ratio	1.94:1	2.57:1

Table 3: Frequency time (hours) of first analgesia required after surgery

Time hours	Group A	Group B
01 - 10	21(42%)	50(100%)
10 – 20	28(56%)	0
>20	1(2%)	0
Mean±SD	12.28±4.77	2.16±1.05

t = 14.63

P value = 0.00

Table 4: Frequency number of analgesia and nalbuphine 2mg I/V during first 24 hours

Number of analgesia	Group A	Group B
1-5	50(100%)	43(86%)
6-10	0	7(14%)

Table 5: Comparison of patient comfort after surgery regarding pain in first 24 hours

Pain after surgery	Group A	Group B
Comfortable	42(84%)	11(22%)
Feeling pain	6(12%)	24(48%)
Severe pain	2(4%)	15(30%)

Chi-square = 38.87

P value = 0.00

CONCLUSION

Fascia iliaca block provide effective post operative analgesia and is associated with markedly reduced analgesic consumption. Fascia iliaca block is useful and highly effective mode of quality post-operative analgesia at minimal cost, with minimal side effects and patients remain more comfortable after surgery with this block.

DISCUSSION

The population affected by fracture neck of femur is a population with multiple-co-morbidities. There are concerns for obtaining adequate analgesia while controlling for the amount of opioid medications used: A reduction in opioid usage during hospitalization for fracture neck of femur reduces the risk of opioid medications used. A reduction in opioid usage during hospitalization for fracture neck of femur reduces the risk of opioid induced side effects like acute delirium, urinary retention and constipation¹⁴.

In our study we conclude that the patient receiving fascia iliaca block remained more comfortable and requirement of rescue analgesia was less in them and the results of the study of Arrola GL et al are in the favor of my study¹⁵.

Similarly the results of Stevens M et al are in favors of my study that fascia iliac block has opioid sparing effect in first 24 hours¹⁶.

Wathen JE et al has demonstrated reduce pain after fascia iliaca block in patient undergoing fracture neck of femur surgery¹⁷. The results of Foss NB et al are also supporting the results of my study¹⁸.

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