

EFFICACY OF CONTINUOUS FASCIA ILIACA BLOCK IN HIP SURGERY IN ELDERLY: A RANDOMIZED CONTROLLED CLINICAL TRIAL.

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ABSTRACT:

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Background: Worldwide, there is a rise in the number of older individuals having surgery for hip fractures, which is linked to high morbidity and mortality rates. By encouraging early ambulation, post-operative pain management plays a crucial part in reducing expected complications. Opioid and nonsteroidal medications used for systemic analgesia have the potential to have serious side effects, especially in elderly individuals. The use of continuous fascia iliaca compartment block (CFICB) in analgesia during surgical treatment for hip fractures is growing as a result of the benefits of fascia iliaca compartment block.

Aim of the work: The current study's objective was to examine the impact of ultrasound guided CFICB in senior hip fracture patients.

Patients and methods: A total of 26 elderly patients, aging more than 65 years old, ASA II, III, with hip fractures, undergoing hip surgery, have been enrolled in the study. They were divided in two groups (13 patients each). One group receiving continuous fascia iliaca compartment block and the other received traditional parenteral analgesia.

Results: Postoperative pain assessment both at rest and with movement using visual analogue score scale for 24 hours showed statistically significant decrease in patients receiving continuous fascia iliaca compartment block.

Conclusion : After hip surgery, a continuous fascia iliaca compartment block significantly reduces postoperative pain.

Keywords : Eldery, hip fractures, pain, regional anathesia , fascia iliaca compartement block, visual analogue score scale.

INTRODUCTION:

The number of elderly patients undergoing surgery due to hip fracture is increasing worldwide ⁽¹⁾. Hip fractures are anticipated to account for more than 6 million new diagnoses annually by 2050. ⁽²⁾ Elderly people frequently suffer from hip fractures, which have considerable morbidity and mortality rates. ⁽³⁾ Numerous recommendations and studies state that patients suffering from fractures of the hip

should have surgery within 24 to 48 hours, also advising early intervention and fixation can relieve pain and lower the incidence of postoperative morbidity and mortality. ⁽⁴⁻⁶⁾ In our study, elderly is defined as ≥ 65 years old patients. Post-operative pain control plays an important role in reducing morbidity and mortality of patients by decreasing stress induced coagulopathy, cardio-respiratory complication, hospital stay by promoting early ambulation. Post-

operative analgesia is one of the different therapies used to reduce complications and hospital stays^(7&8). Due to the pharmacokinetic and pharmacodynamic changes that are usually apparent in the aging population, parenteral analgesia with opioids and non-steroidal analgesics may have considerable negative consequences, especially in older people.⁽⁹⁾ When comparing epidural analgesia to traditional medications in elderly individuals undergoing surgery for hip fractures, prior research showed the benefits of epidural analgesia.^(10&11) These studies' findings showed that epidural analgesia can lower the frequency of peri-operative cardiovascular morbidity; on the other hand, epidural analgesia has its own effect on cardiovascular system and circulation, and patients with hip fractures should receive anticoagulant medications right away after surgery, which may result in epidural hematoma and other serious side effects.⁽¹²⁾ An alternative to epidural analgesia that needs more research is peripheral nerve blocking⁽¹³⁾. Knowing the benefits of fascia iliaca compartment block, its use in hip fracture surgery as potent analgesia is growing. Older patients are more likely to have one or more comorbidities, which may result in a longer postoperative hospital stay. Continuous nerve block of fascia iliaca compartment (CFICB) is potentially more beneficial in these circumstances⁽¹²⁾. However, it has not yet been established whether ultrasound guided CFICB is superior to conventional analgesics and whether it lowers the frequency of perioperative problems in older patients with co-morbidities.

Several previous studies have discussed the effectiveness and safety of Fascia iliaca block as described by Gola et al 2021⁽¹⁴⁾.

Fascia iliaca blocks using continuous catheters are expected to significantly lower morbidity in patients with hip fractures in order to assess the occurrence and influence of opiate prescription side effects. Therefore,

it is interesting to assess whether systemic or CFICB-provided post-operative analgesia is more effective in extremely aging patients suffering from hip fracture.

AIM OF THE WORK:

The current study's objective was to examine the impact of ultrasound guided CFICB in senior hip fracture patients.

Ethical consideration:

Approvals of anesthesia and intensive care department and the ethical committee, faculty of medicine, Ain Shams university were obtained. An informed consent from all patients was obtained prior to the initiation of the research.

Methodology:

a) Design of the study

This was a prospective, observational, and randomized controlled study comparing traditional analgesia and CFICB as post-operative analgesia after hip surgery. This trial is registered at www.clinicaltrials.gov with the registration number: NCT05941208.

A total number of 26 patients, admitted to our hospital, with hip fracture, between April 2023 and July 2023, were included in this study.

b) study population:

Patients with hip fractures, undergoing hip surgery, have been included in the trial.

They were all with the following criteria: (I) ASA II, III patients with unilateral fracture of the hip (intertrochanteric, subtrochanteric or neck femur fracture); (II) aging ≥ 65 years; (III) scheduled for surgical intervention either hemiarthroplasty or total arthroplasty or proximal femoral nail (PFN).

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Patients excluded from our study are those with contraindications for spinal anesthesia and regional blocks, coagulopathy INR >1.8, Thrombocytopenia with Plt count < 50,000, and patients with known allergy to drugs used in the study. Since patients have participated upon their own will after an informed consent, they could withdraw themselves anytime from the research.

c) Treatment Groups:

Patients matching the inclusion criteria (n = 26) were randomly assigned to one of two groups (n = 13 each).

control group—received only parental traditional analgesia in the form of 50 mg pethidine with a maximum 6-hour interval and 1gm paracetamol as per need.

CFICB group—received continuous fascia iliaca block through ultrasound at the end of the surgery.

d) study procedure:

All patients in both groups were informed by the study methods, aim, side effect in clear language, written consent was taken in clear spoken and written language.

All patients of both groups, once arrived to the OR, monitor was attached, baseline SBP, DBP, MAP, SPO₂, PULSE were recorded, spinal anesthesia was performed as follows, after sterilization of the back with bovidon iodine, local anesthesia 3cc of lidocaine 2% Were injected subcutaneously at the level of L3-L4 spine, then injection of 17 mg bupivacaine 0.5% intrathecally through a 25G spinal needle.

At the end of surgery, Study group received continuous fascia iliaca block through ultrasound. The puncture site was chosen with the patients lying supine, 1 cm below the point between the lateral 1/3 and medial 2/3 of the line connecting the anterior superior spine and pubic tubercle. To differentiate between the femoral fascia and fascia iliaca, an ultrasound device (Sonosite)

high-frequency probe was put parallel to the inguinal fold. The needle was then entered using an out-of-plane approach at an angle of 45°, with the tip directed toward the head⁽¹⁵⁾. The probe was rotated 90 degrees into a longitudinal parasagittal orientation once needle-tip placement beneath the fascia iliaca by hydrolocation was confirmed in order to see the needle tip in-plane and follow cephalad distribution of the injectate under the fascia iliaca. Identification of the fascia iliaca plane through the linear probe and introducing epidural catheter 18 G, continuous infusion of bupivacaine 0.25% by a set rate of 7 ml per hour for 24 hours⁽¹⁶⁾.

The control group received conventional analgesics such as 50 mg of pethidine spaced up to six hours apart and 1 gram of paracetamol as needed⁽¹⁵⁾.

Outcome Measurements:

The analgesic effect during and after surgery was assessed using the visual analog scale (VAS) values (0–10, with 0 representing no pain and 10 indicating the greatest pain conceivable). Both at rest (lying flat) and during movement (pain associated with movement was evoked by passively elevating the broken leg to 15°), the VAS ratings were recorded.

VAS scores were recorded at 6, 9, 12 and 24 hours after initiation of the block.

The number of analgesic doses required for each patient as rescue analgesia in the form of 50 mg pethidine given to patients when VAS > 3, was recorded.

Other analyzed outcomes included are the length of hospital stay, early mobilization, incidence of nausea and vomiting, urinary retention, incidence of delirium (using RAMSY score).

Statistical Analysis:

By using Power Analysis and Sample Size Software (PASS 15) (Version 15.0.10) for calculating the sample size of the study,

setting power at 80%, at significance level 0.05 and after reviewing previous study results (Hao et al., 2022) showing that the visual analogue scale for pain (VAS score) after 24 hours of hip surgery was lower in those took Fascia iliaca block than those took routine analgesia (2.86 + 0.82 versus 4.20 ± 1.14 respectively); Based on that and after considering 20% dropout rate, a sample size of 26 patients undergoing hip surgery divided randomly into 2 groups were enrolled in the study to achieve study objective.

To confirm comparability between cohorts Data were collected, revised, coded and entered to the Statistical Package for Social Science (IBM SPSS) version 23. The quantitative data with parametric distribution were presented as mean, standard deviations and ranges. Qualitative variables were also shown as percentages and numbers. The Chi-square test was used to compare groups using qualitative data.

The Independent t-test was used to compare two groups with quantitative data and a parametric distribution, whereas the Mann-Whitney test was used to compare two groups with quantitative data and a non-parametric distribution. The allowable margin of error was set at 5%, while the confidence interval was set at 95%. As a result, the level of significance for the p-value was set at 0.05.

RESULTS:

This study comprised 26 patients totally, with hip fractures. No patients were disqualified following allocation. Age, gender, height, weight, preoperative diagnosis, and surgical method did not significantly differ between the two groups (P >.05).

Table 1 summarizes the demographic data and surgical decision of all patients.

Table 1: Comparison of the demographic information and patient characteristics between the control group and the CFICB group

		Control group Nb. = 13	CFICB group Nb. = 13	Test value	P-value	Sig.
Age	Mean±SD	71.31 ± 5.69	74.92 ± 7.39	-1.398•	0.175	NS
	Range	65 – 82	67 – 92			
Gender	Females	8 (61.5%)	7 (53.8%)	0.158*	0.691	NS
	Males	5 (38.5%)	6 (46.2%)			
ASA	II	8 (61.5%)	8 (61.5%)	0.000*	1.000	NS
	III	5 (38.5%)	5 (38.5%)			
Preop diagnosis	Subtrochanteric fracture	4 (30.8%)	2 (15.4%)	0.917*	0.632	NS
	Intertrochanteric fracture	2 (15.4%)	2 (15.4%)			
	Fracture neck femur	7 (53.8%)	9 (69.2%)			
Surgical procedure	B	7 (53.8%)	6 (46.2%)	0.277*	0.871	NS
	T	4 (30.8%)	4 (30.8%)			
	PFN	2 (15.4%)	3 (23.1%)			

P>0.05: Non-significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS)

•: Independent t-test; *: Chi-square test

CFICB, continuous fascia iliaca compartment block; B, bipolar hemiarthroplasty; T, total hip arthroplasty; PFN, proximal femoral nail fixation. Pain assessment and analgesia.

Table 2 shows the recorded resting pain intensities at all follow-ups. At 6 hours, 9

hours, and 24 hours following surgery, the pain score at rest using VAS score was considerably lower in the CFICB group compared to the control group (P 0.05), but no statistically significant differences were seen at 12 hours after surgery, despite the fact that it was lower in the CFICB group.

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Table 2: Comparison between both groups regarding VAS score at rest of the studied patients

VAS at rest		Control group	CFICB group	Test value	P-value	Sig.
		Nb. = 13	Nb. = 13			
Preoperative	Mean±SD	5.38 ± 0.96	5.08 ± 0.76	0.740≠	0.459	NS
	Range	4 – 7	4 – 6			
6hrs	Mean±SD	4.62 ± 0.77	3.85 ± 0.69	2.366≠	0.018	S
	Range	4 – 6	3 – 5			
9hrs	Mean±SD	4.62 ± 0.77	3.54 ± 0.66	3.237≠	0.001	HS
	Range	4 – 6	2 – 4			
12hrs	Mean±SD	3.85 ± 0.99	3.08 ± 0.76	1.895≠	0.058	NS
	Range	3 – 6	2 – 4			
24hrs	Mean±SD	3.31 ± 0.63	2.31 ± 0.48	3.691≠	0.000	HS
	Range	3 – 5	2 – 3			

P>0.05: Non-significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) ≠: Mann-Whitney test

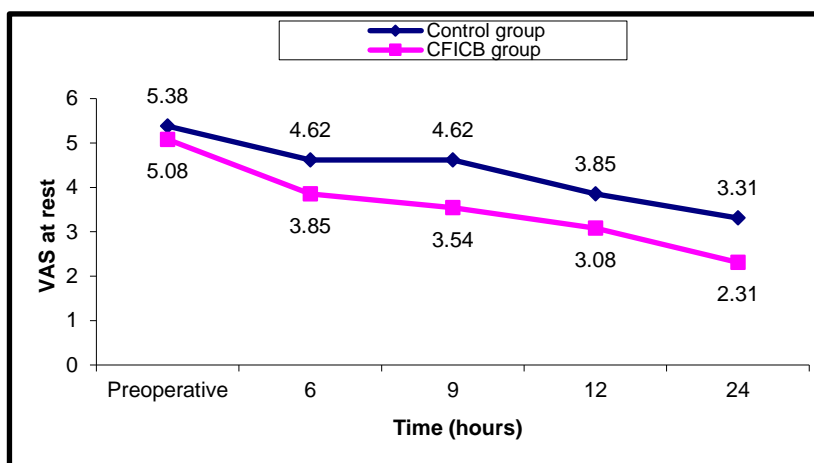


Diagram. 1 presents the pain alterations at rest.

The VAS scores with movement were significantly lower in the CFICB group, (P < 0.01), compared to the control group at 6 hours, 9hours 12 hours and 24 hours post operation scores with movement.

Table 3: Comparison between VAS score at movement in control and CFICB groups.

VAS at movement		Control group	CFICB group	Test value	P-value	Sig.
		Nb. = 13	Nb. = 13			
Preoperative	Mean±SD	5.38 ± 0.96	5.08 ± 0.76	0.906≠	0.374	NS
	Range	4 – 7	4 – 6			
6hrs	Mean±SD	6.0 ± 1.0	4.38 ± 0.77	4.619≠	0.000	HS
	Range	5 – 8	3 – 5			
9hrs	Mean±SD	5.0 ± 0.82	4.0 ± 0.82	3.122≠	0.005	HS
	Range	4 – 6	3 – 5			
12hrs	Mean±SD	4.92 ± 0.95	3.31 ± 0.75	4.797≠	0.000	HS
	Range	4 – 6	2 – 4			
24hrs	Mean±SD	4.0 ± 1.0	2.69 ± 0.48	4.250≠	0.000	HS
	Range	3 – 5	2 – 3			

P>0.05: Non-significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) ≠: Mann-Whitney test

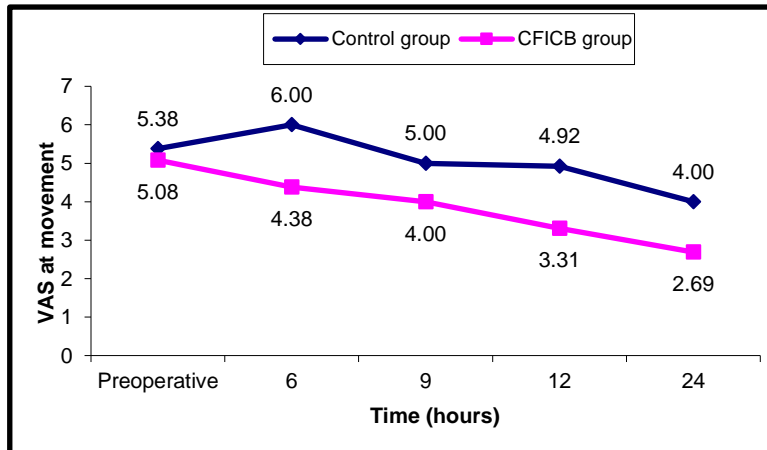


Diagram 2: Pain alterations with movement

Regarding blood pressure changes, systolic blood pressure was recorded at 6 hrs, 9, 12, and 24 hours post operative, it was slightly lower in CFICB but statistically no

significant difference was found between the two groups except at 9 hours post operative it was significantly lower in CFICB group with ($P < 0.05$)

Table 4: Comparison between control group and CFICB group regarding systolic blood pressure of the studied patients

Systolic blood pressure (mmHg)		Control group	CFICB group	Test value	P-value	Sig.
		Nb. = 13	Nb. = 13			
Preoperative	Mean±SD	134.62 ± 17.13	134.62 ± 17.13	0.000•	1.000	NS
	Range	110 – 160	110 – 160			
6hr	Mean±SD	126.92 ± 16.53	115.38 ± 18.08	1.698•	0.102	NS
	Range	110 – 150	100 – 140			
9hr	Mean±SD	135.38 ± 13.91	123.85 ± 11.21	2.328•	0.029	S
	Range	100 – 150	110 – 140			
12hr	Mean±SD	134.62 ± 17.13	129.23 ± 6.41	1.061•	0.299	NS
	Range	110 – 160	120 – 140			
24hr	Mean±SD	130 ± 13.54	125.38 ± 7.76	1.066•	0.297	NS
	Range	110 – 150	120 – 140			

$P > 0.05$: Non-significant (NS); $P < 0.05$: Significant (S); $P < 0.01$: Highly significant (HS)

•: Independent t-test

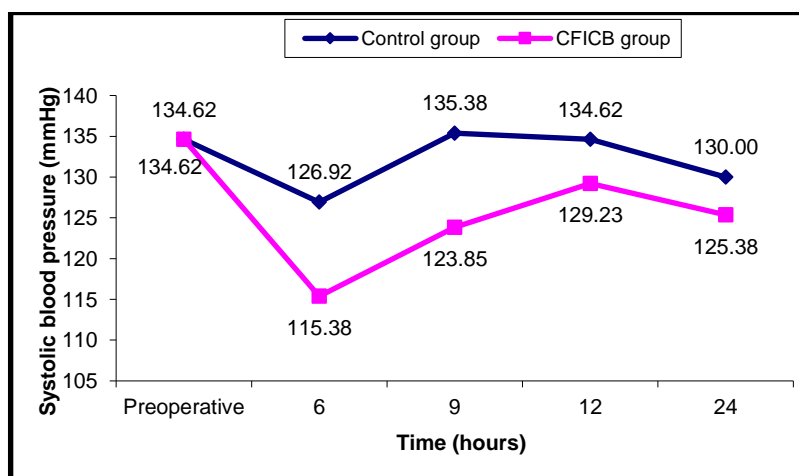


Diagram 3 : Systolic blood pressure alterations.

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Regarding diastolic blood pressure measured at all intervals, it was found highly significant difference at 9hours, and 12 hours post operation with (P<0.01).

Also, it was lower at other intervals, but the results were statistically non-significant.

Table 5: Diastolic blood pressure of the patients being studied was compared between the control group and the CFICB group.

Diastolic blood pressure (mmHg)		Control group	CFICB group	Test value	P-value	Sig.
		Nb. = 13	Nb. = 13			
Pre	Mean±SD	78.46 ± 10.68	72.31 ± 7.25	1.719•	0.099	NS
	Range	60 – 90	60 – 80			
6hr	Mean±SD	74.62 ± 9.67	69.23 ± 8.62	1.498•	0.147	NS
	Range	60 – 90	60 – 80			
9hr	Mean±SD	81.54 ± 6.89	69.23 ± 7.6	4.328•	0.000	HS
	Range	70 – 90	60 – 80			
12hr	Mean±SD	81.54 ± 8.99	72.31 ± 4.39	3.328•	0.003	HS
	Range	70 – 90	70 – 80			
24hr	Mean±SD	76.92 ± 7.51	75.38 ± 5.19	0.608•	0.549	NS
	Range	70 – 90	70 – 80			

P>0.05: Non-significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) •: Independent t-test

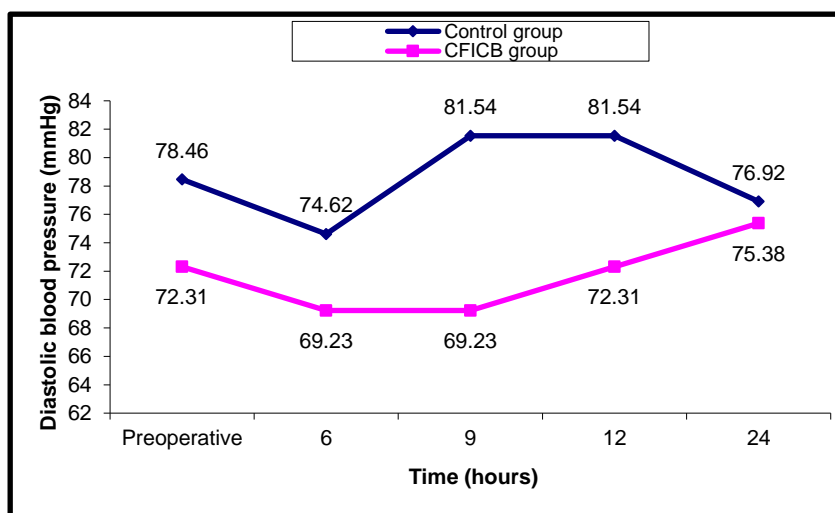


Diagram 4 : diastolic blood pressure alteration .

The CFICB group had reduced complication occurrences compared to the control group, however these differences were not statistically significant. The incidences of postoperative adverse events were comparable across the two groups. The CFICB group reported just one instance of a

puncture site hematoma, which resolved with local compression.

A total of two patients died after surgery. One had a sudden cardiac event while in the RA group, while the other one was in CFICB group and had a cerebral infarction.

Table 6: Comparison between control group and CFICB group regarding percentage of complications of the studied patients

Complications		Control group	CFICB group	Test value	P-value	Sig.
		Nb. = 13	Nb. = 13			
Delirium	No	8 (61.5%)	10 (76.9%)	0.722*	0.395	NS
	Yes	5 (38.5%)	3 (23.1%)			
Chest infection	No	9 (69.2%)	10 (76.9%)	0.195*	0.658	NS
	Yes	4 (30.8%)	3 (23.1%)			
Mortality	No	12 (92.3%)	12 (92.3%)	0.000*	1.000	NS
	Yes	1 (7.7%)	1 (7.7%)			
DVT	No	11 (84.6%)	10 (76.9%)	0.248*	0.619	NS
	Yes	2 (15.4%)	3 (23.1%)			

P>0.05: Non-significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) *: Chi-square test

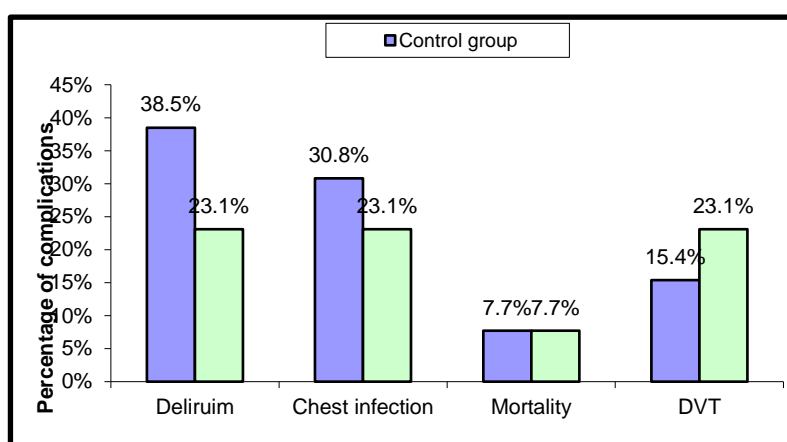


Diagram 5: incidence of complications

DISCUSSION:

Patients with hip fractures frequently experience excruciating agony, especially when moving. Elderly patients with hip fractures must have pain control both before and after surgery. Therefore, effective pain treatment can significantly enhance patient outcomes. Despite the fact that epidural analgesia after surgery offers effective analgesia, it has lost favor since anticoagulants and early ambulation are frequently thought to be of great importance. In order to get quick restoration of hip function, early postoperative analgesia is crucial¹⁸. Precision nerve block has advanced significantly after the adoption and popularization of ultrasound technology. Other methods of analgesia besides FICB include other nerve blocks like femoral

nerve, pericapsular nerve group, and lumbar plexus. Because the puncture is made safely away from the femoral artery and nerve, the FICB approach carries a low risk. It has been shown that even a small dose has the ability to considerably reduce pain within a few hours⁽¹⁶⁾.

Our research showed that both resting and moving postoperative pain can be significantly reduced using regional anesthetic approaches. Previous research suggested that parenteral analgesics could reduce resting pain for the patient, but this analgesic effect with movement is limited.¹⁷ Patients who got FICB had considerably less pain with mobility at all times following surgery in Yamamoto's study which compared intravenous acetaminophen and FICB after hip surgery¹⁸. They only used.

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25% levobupivacaine, but we continuously infused 0.25% bupivacaine throughout the course of 24 hours at a rate of 7 ml each hour.

In a randomized controlled trial by Ma et al. ⁽¹⁹⁾ involving 88 senior citizens with hip fractures, the study group had continuous FICB. According to the authors, participants who got FICB reported less discomfort overall, whether they were at rest or moving around. Additionally, FICB shortened hospital stays, improved analgesic satisfaction, and decreased hospital expenses. Our findings corroborated these earlier findings because we also saw that CFICB improved blood pressure stability in the study group with less stress and pain-induced increased blood pressure in addition to better pain control when at rest and with movement.

Delirium is one of these patients' most frequent consequences, with a frequency that ranges from 38% to 62%, and its prevalence increases with increasing age, presence of comorbidities, and cognitive ability ⁽²⁰⁾. Severe postoperative pain is thought to be a major risk causing delirium. Additionally, delirium is more likely to develop in the presence of severe pain because pro-inflammatory cytokines are activated and released more quickly. The perioperative delirium can be avoided by the analgesic impact of FICB, which can lower the release of pro-inflammatory cytokines. Additionally, lowering opioid use can also lower the release of cytokines that promote inflammation ⁽²⁰⁾.

In the current study it was noticed less incidence of delirium in patients with CFICB which might be explained by less experienced pain and reduced doses of narcotics compared to the control group, but the results were statistically insignificant, will be more evident on a larger study group.

Different researchers, though, have varied opinions on FICB. After hip

arthroscopy surgery, Alan et al administered nerve blocks that targeted the fascia iliaca compartment to reduce postoperative discomfort. The results of the randomized controlled experiment showed that, when compared to a placebo, local anesthetic injections into the fascia iliaca compartment did not reduce postoperative pain. They discovered that FICB increased the chance of falling after surgery and caused a decline in quadriceps strength ⁽²¹⁾. Our study employed continuous infusion FICB, and the results we obtained regarding pain management were favorable. Unfortunately, we did not precisely assess quadriceps strength, however there were no falls in the early postoperative period.

Additionally, FICB prevents pain transmission from these tissues by targeting the obturator, femoral and lateral cutaneous femoral nerves. FICB does not, however, obstruct the sciatic nerve, which is the main nerve supply for the back of the thigh. The receptors found on the posterior aspect of the femur may become irritated due to surgical traction or hematoma formation at the operative site, promoting nociception transmitted by the sciatic nerve. To treat the discomfort in the back of the thigh following surgery, more analgesics may be needed ⁽²²⁾.

The study's limitations were numerous. First, we did not statistically compare how many additional analgesics each group took following surgery. According to several studies, FICB significantly lowers opiate intake following hip surgery. The use of fascia iliaca block and intravenous analgesia in patients with hip fractures was actually compared by Thompson. According to the author, analgesic consumption in the form of tramadol was decreased by 43% in the moderate pain group. also in the severe pain group, it was decreased by 98% ⁽²³⁾.

Second, given the small patient population, it would be important to determine if CFICB lowers the incidence of postoperative complications either

cardiovascular, pulmonary, or cerebral problems in older individuals with hip fracture by employing large-scale studies.

Unfortunately, because it would be unethical to perform a placebo fascia iliaca compartmental block and introduce a catheter only for blinding purposes, our patients weren't blinded to the allocation.

Conclusion:

In conclusion, this study showed that continuous fascia iliaca compartment block offers superior short-term analgesic effect following surgery, both at rest and with movement, as well as a lower incidence of pain-induced blood pressure changes in the initial postoperative period. This trial supports the use of CFICB as an analgesic following hip fracture surgery.

Conflict of interest and funding:

The authors declare that there was no conflict of interest.

There was no funding of the study from any source.

REFERENCES:

1. **Johnell O, Kanis JA.** An estimate of the worldwide prevalence, mortality and disability associated with hip fracture. *Osteoporos Int.* 2004; 15:897–902. doi: 10.1007/s00198-004-1627-0.
2. **Watters CL, Moran WP.** Hip fractures-a joint effort. *Orthop Nurs.* 2006; 25:157–165. doi: 10.1097/00006416-200605000-00003. quiz 166–167.
3. **Marks R.** Hip fracture epidemiological trends, outcomes, and risk factors, 1970–2009. *Int J Gen Med.* 2010; 3:1–17
4. **Boddaert J, Cohen-Bittan J, Khiami F, Khiami F, Le Manach Y, Raus M, Beinis JY, Verny M, Riou B.** Postoperative admission to a dedicated geriatric unit decreases mortality in elderly patients with hip fracture. *PLoS One.* 2014;9: e83795. doi: 10.1371/journal.pone.0083795
5. **Rosencher N, Vielpeau C, Emmerich J, Fagnani F, Samama CM.** ESCORTE group: Venous thromboembolism and mortality after hip fracture surgery: The ESCORTE study. *J Thromb Haemost.* 2005; 3:2006–2014. doi: 10.1111/j.1538-7836.2005.01545. x.
6. **Mak JC, Cameron ID, March LM.** National health and medical research council: Evidence-based guidelines for the management of hip fractures in older persons: An update. *Med J Aust.* 2010; 192:37–41
7. **Simunovic N, Devereaux PJ, Sprague S, Guyatt GH, Schemitsch E, Debeer J, Bhandari M.** Effect of early surgery after hip fracture on mortality and complications: Systematic review and meta-analysis. *CMAJ.* 2010; 182:1609–1616. doi: 10.1503/cmaj.092220
8. **Moja L, Piatti A, Pecoraro V, Ricci C, Virgili G, Salanti G, Germagnoli L, Liberati A, Banfi G.** Timing matters in hip fracture surgery: Patients operated within 48 hours have better outcomes. A meta-analysis and meta-regression of over 190,000 patients. *PLoS One.* 2012;7: e46175. doi: 10.1371/journal.pone.0046175
9. **Colais P, Di Martino M, Fusco D, Perucci CA, Davoli M.** The effect of early surgery after hip fracture on 1-year mortality. *BMC Geriatr.* 2015; 15:141. doi: 10.1186/s12877-015-0140-y.
10. **Association of Anaesthetists of Great Britain and Ireland, corp-author. Griffiths R, Alper J, Beckingsale A, Goldhill D, Heyburn G, Holloway J, Leaper E, Parker M, Ridgway S, et al.** Management of proximal femoral fractures 2011: Association of Anaesthetists of Great Britain and Ireland. *Anaesthesia.* 2012; 67:85–98. doi: 10.1111/j.1365-2044.2011.06957.x
11. **Tran T, Delluc A, de Wit C, Petrcich W, Le Gal G, Carrier M.** The impact of oral anticoagulation on time to surgery in patients hospitalized with hip0 fracture. *Thromb Res.* 2015; 136:962–965. doi: 10.1016/j.thromres.2015.09.017.

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12. **Orosz GM, Hannan EL, Magaziner J, Koval K, Gilbert M, Aufses A, Straus E, Vespe E, Siu AL.** Hip fracture in the older patient: Reasons for delay in hospitalization and timing of surgical repair. *J Am Geriatr Soc.* 2002; 50:1336–1340. doi: 10.1046/j.1532-5415.2002.50353.x
13. **Kanis JA, Johnell O, Oden A, Sembo L, Redlund-Johnell L, Dawson A, De Laet C, Jonsson B.** Long-term risk of osteoporotic fracture in Malmö Osteoporosis Int. 2000;11:669–674. doi: 10.1007/s001980070064
14. **Wojciech Gola, Szymon Bialka, Aleksander J. Owczarek and Hanna Misiolek** Effectiveness of Fascia Iliaca Compartment Block after Elective Total Hip Replacement: A Prospective, Randomized, Controlled Study *Int J Environ Res Public Health.* 2021 May; 18(9): 4891. Published online 2021 May 4. doi: 10.3390/ijerph18094891
15. **O'Reilly N., Desmet M., Kearns R.** Fascia iliaca compartment block. *BJA Educ.* 2019; **19:191–197.** doi: 10.1016/j.bjae.2019.03.001.
16. **Gaffney CJ, Pelt CE, Gililand JM, Peters CL.** Perioperative pain management in hip and knee arthroplasty. *Orthop Clin N Am.* 2017;48(4):407-419.
17. **Wennberg P, Hillberg Hörnfeldt T, Stål S, Herlitz J, Björås J, Larsson G.** Fascia iliaca compartment block (FICB) as pain treatment in older persons with suspected hip fractures in prehospital emergency care - A comparative pilot study. *International emergency nursing.* 2021; 57:101012.
18. **Yamamoto N, Sakura S, Noda T, et al.** Comparison of the postoperative analgesic efficacies of intravenous acetaminophen and fascia iliaca compartment block in hip fracture surgery: A randomised controlled trial. *Injury.* 2019;50(10):1689-1693
19. **Ma Y, Wu J, Xue J, Lan F, Wang T.** Ultrasound-guided continuous fascia iliaca compartment block for pre-operative pain control in very elderly patients with hip fracture: A randomized controlled trial. *Exp Ther Med.* 2018;16(3):1944-1952.
20. **Witlox J, Eurelings LSM, de Jonghe JFM, Kalisvaart KJ, Eikelenboom P, van Gool WA.** Delirium in elderly patients and the risk of postdischarge mortality, institutionalization, and dementia. *JAMA.* 2010;304(4):443-451.
21. **Zhang AL.** Editorial Commentary: The Truth about Peripheral Nerve Blocks and Hip Arthroscopy. *Arthrosc J Arthrosc Relat Surg.* 2019;35(9):2617-2618.
22. **Nie H, Yang Y-X, Wang Y, Liu Y, Zhao B, Luan B.** Effects of continuous fascia iliaca compartment blocks for postoperative analgesia in patients with hip fracture. *Pain Res Manag.* 2015;20(4):210-212.
23. **Thompson J, Long M, Rogers E, et al.** Fascia iliaca block decreases hip fracture postoperative opioid consumption: a prospective randomized controlled trial. *J Orthop Trauma.* 2020;34(1):49-54.

فاعليه التخدير الطرفي المستمر لللفافه الفخذييه في عمليات مفصل الفخذ لكبار السن

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الخلفيه العلميه : يتزايد عدد المرضى المسنين الذين يخضعون لعملية جراحية بسبب كسر الورك في جميع أنحاء العالم. ويرتبط بمرضاة ووفيات كبيرة . تخدم إدارة الألم بعد الجراحة دورًا مهمًا في تقليل معدلات المرأضة والوفيات لدى المرضى من خلال تعزيز التمشي المبكر. قد يؤدي التسكين الجهازى باستخدام المواد الأفيونية والمسكنات غير الستيرويدية إلى آثار ضائرة كبيرة خاصة في المرضى المسنين.

نظرًا لمزايا كتلة مقصورة للفاقة ، فإن تطبيقها في التسكين في جراحة كسر الورك أخذ في الازدياد ، يُفترض أن التخدير الطرفي للفاقة الفخذييه عن طريق القسطرة المستمرة قد تقلل بشكل كبير من العواقب في المرضى الذين يعانون من كسر الورك.

المرضى و الطرق: عدد 26 مريض مسن اكثر من 65 عام يعانون من كثر الفخذ و مقرر يخضعون للجراحه تم انضمامهم للدراسه . تم تقسيم المشتركين الي مجموعتين (13 مريض في كل مجموعه) . المجموعه الاولى خضعت للتخدير الطرفي المستمر للفاقه الفخذييه و المجموعه الثانيه خضعت للمسكنات التقليديه .

النتائج : تبين وجود تباين احصائي في تسكين الام ما بعد الجراحه مع الحركه و مع الراحة لمده 24 ساعه و كان الالم اقل كثيرا في مجموعه التخدير الطرفي للفاقه الفخذييه .

الخاتمه : التخدير الطرفي للفاقه الفخذييه يتيح تسكين قوي لالام ما بعد الجراحه لعمليات الفخذ.