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**Search details**

Pre-operative analgesia for fractured neck of femur patients

**Resources searched**

NHS Evidence; Cochrane Library; TRIP database; NICE; MEDLINE; EMBASE; CINAHL neck of femur; femoral neck; fracture; FEMORAL NECK FRACTURES; analgesia; ANALGESIA; preoperative; pre-operative; pre operative; PREOPERATIVE CARE

**Summary**

There has not been much research published on this topic. The few studies found, cover a range of interventions for pre-operative analgesia, but no definite conclusion can be drawn about the effectiveness of one intervention over another:

- FICB provided pain relief after fractured neck of femur in more than 70% of patients.¹

- Significant pain relief was achieved in both groups following initial administration of analgesia, yet the total pain scores in group A (catheter-mediated femoral nerve block with 1% prilocaine) were significantly lower than those recorded for group B.³

- We conclude that fascia iliaca blocks can provide significant benefit in the pre-operative period and allow patients to sit up more comfortably while they await surgery.⁵

- The preoperative management of pain included insertion of an epidural catheter at the L2-L4 interspace immediately after injury for injection of 0.25 % bupivacaine.⁸
- Pre-operative therapy was managed with doxazosin, enalapril and diltiazem.
- The conclusion was that skin traction offered no benefits in pain control for the patient and therefore should not be used routinely.
- The patients in the local anaesthetic groups also received a light general anaesthetic. There was little difference in the pre-, intra- and postoperative events, and no difference in postoperative mortality.

### Guidelines

**SIGN**

**Management of hip fracture in older people** 2009

6.3 **PERIPHERAL NERVE BLOCKS**

A systematic review of the use of nerve block for pain relief before and/or after surgery for fractured neck of femur identified seven studies on the use of nerve block and one study on epidural analgesia. All eight studies had methodological flaws and small patient numbers. The use of peripheral nerve blocks as part of a multimodal approach to pain management following surgical repair of hip fracture, reduced parenteral analgesic requirement in the initial 24 hour following surgery. Reduction in parenteral analgesic requirements was not translated into a reduction in complications associated with parenteral therapy. None of the studies reported on mental function, functional status or return to previous residence, indicating that apart from reduced parenteral therapy requirement in the first 24 hours, no other clinical benefit for the patient was reported.

### Evidence based reviews

**BestBETS**

**Regional nerve block in fractured neck of femur** 2002

The above studies suggest some benefit for the use of nerve block in fractured neck of femur in the pre-operative setting, most notably in extracapsular fractures. However, the studies are small and have important weaknesses.

**Evidence Based Nursing**

**Preoperative pillow placement under the injured extremity had better analgesic effects than skin traction for hip fracture** 2002

### Published research

1. **Nurse administered fascia iliaca compartment block for pre-operative pain relief in adult fractured neck of femur**

Author(s): Obideyi A., Srikantharajah I., Grigg L., Randall A.

Citation: Acute Pain, December 2008, vol./is. 10/3-4(145-149), 1366-0071

Publication Date: December 2008

Abstract: Aim: To assess the efficacy of fascia iliaca compartment block (FICB) administered by pain specialist nurses to relieve pain after fractured neck of femur in adults. Method: Approval was obtained to train two pain nurses on how to perform FICB. Exclusion criteria were set out and adhered to. 30 ml of 0.25% plain bupivacaine was given to establish the block. Pain score using the visual analogue scales was documented pre-block and then at 15 min, 2 h, 8 h and 24 h after the block. Results: Eleven male and 24 female patients aged 62-102 years had the block. The pain score at presentation for all the patients was 8-10. Fifty-four, 72.7, 77.4 and 80% of the patients had a pain score of 4 or less at 15 min, 2 h, 8 h and 24 h, respectively, after the block. The frequency for the
additional analgesics varied between 0 and 2 times in 24 h post-block. There were no reported complications as a result of the procedure. Conclusion: FICB provided pain relief after fractured neck of femur in more than 70% of patients and can be successfully performed by other trained health care providers without anaesthetic background. Crown Copyright copyright 2008.

Source: EMBASE

2. A national survey into the peri-operative anaesthetic management of patients presenting for surgical correction of a fractured neck of femur

Author(s): Sandby-Thomas M, Sullivan G, Hall JE

Citation: Anaesthesia, March 2008, vol./is. 63/3(250-8), 1365-2044

Publication Date: March 2008

Abstract: We conducted a national postal survey of trauma anaesthetists in the UK to ascertain current practice for the peri-operative anaesthetic management in patients with fractured necks of femur. We received 155 replies from 218 questionnaires sent (71.1% response rate). Regional anaesthesia was preferred by 75.8% of respondents, with 95.5% of these employing a spinal technique. This was generally performed bad side down (45.7%) using ketamine (37.3%) and/or midazolam (41.2%) to aid positioning. In all, 31.4% used fentanyl in the intrathecal injectate, whereas only 5.9% used morphine. Paracetamol and morphine were the most commonly used postoperative analgesic regimens with non-steroidal anti-inflammatory drugs used by only 27.4%. Continuous epidural or nerve block infusions were used rarely. Of the anaesthetists, 50.6% would only request a pre-operative echo if there were suspicious signs or symptoms in patients with a previously undiagnosed heart murmur. The peri-operative management of these patients can be readily improved.

Source: MEDLINE

Full Text:
Available in print at Lincoln County Hospital Professional Library
Available in print at Pilgrim Hospital Staff Library

3. Acute pain management in proximal femoral fractures. Femoral nerve block (catheter technique) vs. systemic pain therapy using a clinic internal organisation model

Author(s): Gille J., Gille M., Gahr R., Wiedemann B.

Citation: Anaesthesist, April 2006, vol./is. 55/4(414-422), 0003-2417

Publication Date: April 2006

Abstract: Background. The aim of this study was to compare catheter-mediated femoral nerve block analgesia with systemic pain therapy in patients with proximal femoral fractures in the pre- and postoperative setting. Methods. In a prospective randomised trial of patients attending the emergency department, 100 individuals were selected. Group A (n=50) received a catheter-mediated femoral nerve block with 1% prilocaine and post-operatively 0.2% ropivacaine. Group B (n=50) initially received intravenous metamizol and a fixed combination of oral tilidine + naloxone. In the post-operative period regular oral ibuprofen in addition to oral tilidine + naloxone was given as required for break through pain. Pain intensity was measured using a verbal rating scale (VRS). Pain scores were recorded at rest and during passive anteflection of the hip. Results. Significant pain relief was achieved in both groups following initial administration of analgesia, yet the total pain scores in group A were significantly lower than those recorded for group B. No difference was noted.
between the 2 groups during the first 3 postoperative days. No severe complications occurred as a result of analgesia. Conclusion. Catheter mediated femoral nerve block should be considered as the method of choice in initial pain therapy. The inherent cumbersome logistics of the catheter technique within the postoperative setting limits its practical application. copyright Springer Medizin Verlag 2005.

Source: EMBASE

4. Anaesthesia for fractured neck of femur

Author(s): Sutcliffe A.J.

Citation: Anaesthesia and Intensive Care Medicine, March 2006, vol./is. 7/3(75-77), 1472-0299

Publication Date: March 2006

Abstract: Mortality following surgery for fractured neck of femur has remained unchanged for many years. Some factors associated with mortality such as increasing age, poor preoperative mobility and dementia cannot be improved by the anaesthesiologist; however, other factors such as correction of dehydration and hypovolaemia or optimization of treatment for co-existing disease can. Most surgeons believe that surgery within the first 24 hours after injury improves outcome. There is evidence that delaying surgery for up to 3 days after the injury to allow aggressive preoperative management of the patient is more appropriate. Evidence supporting practice guidelines is weak. The consensus opinion regarding current best practice is that meticulous preoperative preparation, choice of anaesthesia to suit the patient's needs, enforced perioperative nutrition and hydration, adequate pre- and postoperative analgesia, early mobilization and thromboprophylaxis will all contribute to a good outcome for the patient. copyright 2006 Elsevier Ltd. All rights reserved.

Source: EMBASE

5. Pre-operative analgesia for patients with femoral neck fractures using a modified fascia iliaca block technique.

Author(s): Candal-Couto JJ, McVie JL, Haslam N, Innes AR, Rushmer J

Citation: Injury, April 2005, vol./is. 36/4(505-10), 0020-1383

Publication Date: April 2005

Abstract: Adequate pre-operative analgesia for elderly patients with femoral neck fractures is difficult to assess and is often an overseen aspect of their care. We aimed to assess the efficacy of fascia iliaca blocks inserted via plexus blockade catheters in the pre-operative period. Our simple technique allowed the block to be administered safely without the need for a nerve stimulator. We assessed the effectiveness of the block with a novel objective sitting score and by assessing the degree of passive hip flexion that could be achieved comfortably. Visual analogue scores were also used. We studied 30 consecutive patients, regardless of their mental state. One hour following the block, there was a significant improvement in the sitting scores as well as the passive hip flexion (mean increase 44 degrees). Visual analogue scores also score improved significantly from 7.2 to 4.6 (S.D. 2.4) in the 18 patients without cognitive impairment. We conclude that fascia iliaca blocks can provide significant benefit in the pre-operative period and allow patients to sit up more comfortably while they await surgery.

Source: MEDLINE

Full Text:

Available in print at Lincoln County Hospital Professional Library
6. Efficacy of preoperative skin traction in hip fracture patients: a prospective, randomized study

Author(s): Rosen JE, Chen FS, Hiebert R, Koval KJ

Citation: Journal of Orthopaedic Trauma, February 2001, vol./is. 15/2(81-5), 0890-5339

Publication Date: February 2001

Abstract: OBJECTIVE: To compare the analgesic benefit of preoperative skin traction with the placement of a pillow under the injured extremity in patients with hip fractures. DESIGN: Prospective, randomized clinical study. SETTING: University-affiliated teaching institution. PATIENTS AND PARTICIPANTS: One hundred consecutive patients with hip fractures admitted to the authors' institution who met inclusion criteria were enrolled. Fifty-five patients had femoral neck fractures, and forty-five patients had intertrochanteric fractures. The average patient age was seventy-eight years. INTERVENTION: All patients were preoperatively randomized into two intervention groups. One group underwent placement of five pounds of skin traction on the injured extremity, whereas the second underwent placement of a pillow under the injured extremity. Fifty patients were enrolled in each intervention group. RESULTS: With respect to immediate postintervention pain levels, patients treated with a pillow showed a trend toward better pain relief, as compared with patients treated with skin traction; however, this was not statistically significant. On the morning after admission, patients treated with a pillow had a statistically significant greater reduction in pain (p = 0.04). These patients also requested a statistically significant lower amount of pain medication (p < 0.01). CONCLUSIONS: The authors think that preoperative skin traction in patients with hip fractures does not provide significant pain relief, as compared with pillow placement under the injured extremity, and thus should not be routinely performed in this patient population for analgesia.

Source: MEDLINE

Full Text: Available in fulltext at Ovid

7. Pre- and postoperative complications of elderly patients with femoral neck fractures - A report of 525 cases

Author(s): Suzuki S., Tabata M., Murai K., Okazaki H., Goto T.

Citation: Japanese Journal of Anesthesiology, 1999, vol./is. 48/5(528-533), 0021-4892

Publication Date: 1999

Abstract: Pre- and postoperative complications of 525 cases of femoral neck fractures in elderly patients were studied. The mean age was 81.5 years. Preoperative complications were found in 94.5% of the patients. Circulatory and respiratory complications were 68.4% and 29.7%, respectively. Dementia was present in 55.6% of the patients. Operations for fractures were performed under spinal anesthesia only or under both spinal and epidural anesthesia. We tried to avoid hypotension and hypoxia during operations and postoperative periods under pulse oximeteric monitoring. In the postoperative period, circulatory and respiratory diseases exacerbated or newly developed in 4.4% and 5.7% of all cases, respectively. Postoperative mortality within a month was 1.0%, and it was 3.6% within a year. Many elderly patients with femoral neck fractures had preoperative complications, but postoperative complications could be avoided by careful management during pre- and postoperative periods.
8. Epidural anesthesia for the repair of the femoral neck fracture in elderly patients

Author(s): Nagara M., Uchimura K., Nagara H., Furuya Y.

Citation: Japanese Journal of Anesthesiology, 1995, vol./is. 44/3(419-422), 0021-4892

Publication Date: 1995

Abstract: For the repair of the femoral neck fracture in the elderly patients, an epidural catheter was inserted immediately after injury and epidural anesthesia was employed to allow radical operation as early as possible. The subjects were 45 patients with a mean age of 81.4 years. Surgical procedures were osteosynthesis and replacement of the femoral cap. The preoperative management of pain included insertion of an epidural catheter at the L2-L4 interspace immediately after injury for injection of 0.25 % bupivacaine. The catheter was inserted 1.5 days on average after injury, and surgery was undertaken 1.4 days on average after the insertion. The intraoperative management included epidural anesthesia by injection of 1.5 % mepivacaine. The mean duration of anesthesia was 150 min, and the total amount of mepivacaine used during the operation averaged 284 mg. For postoperative management, the epidural catheter was retained for 5 days on average to achieve adequate pain relief. The incidence of postoperative complications was relatively low, and the post operative course was also favorable.

Source: EMBASE


Author(s): Roberts HC, Eastwood H

Citation: Injury, May 1994, vol./is. 25/4(237-9), 0020-1383

Publication Date: May 1994

Abstract: A survey, by two methods, of the pain felt preoperatively by 100 elderly patients with an acute fracture of the femoral neck showed that most felt a great deal of pain and that a painless fracture was exceptional. No relationship was found between pain appreciation and the patient's fracture type or their age. One of the methods suggested that elderly patients with preserved mental function felt more pain, and the other that less pain was felt by those taking regular prefracture analgesia. The amount of analgesic drugs given to the patients in this survey seemed inadequate for their levels of perceived pain; accordingly regular measurement by nurses of the degree of pain felt preoperatively by patients with this condition is recommended, together with a greater medical review of the medication being prescribed.

Source: MEDLINE

10. Epidural anaesthesia for insertion of a femoral neck prosthesis in a patient with phaeochromocytoma

Author(s): Kato T., Takase H., Waguri Y., Ikeda K., Takahashi M.

Citation: European Journal of Anaesthesiology, 1993, vol./is. 10/6(441-444), 0265-0215

Publication Date: 1993

Abstract: A hemiarthroplasty for femoral neck fracture was successfully performed under combined epidural anaesthesia and light general anaesthesia before phaeochromocytoma
removal. Pre-operative therapy was managed with doxazosin, enalapril and diltiazem. Peri-operative management facilitated maintenance of stable haemodynamic conditions. Post-operative pain management was provided with continuous 1% lignocaine infusion via an epidural catheter. The phaeochromocytoma was finally removed uneventfully 7 weeks after hemiarthroplasty.

Source: EMBASE

11. Preoperative traction for hip fractures in the elderly: A clinical trial

Author(s): Needoff M., Radford P., Langstaff R.

Citation: Injury, 1993, vol/is. 24/5(317-318), 0020-1383

Publication Date: 1993

Abstract: A consecutive series of 100 patients with femoral neck fractures were assessed by a mental test score on admission. The 67 scoring within the normal range were randomly assigned to skin traction or no traction between admission and operation. Using pain assessment scales and records of analgesic consumption, there was found to be little difference between the two groups. The conclusion was that skin traction offered no benefits in pain control for the patient and therefore should not be used routinely.

Source: EMBASE


Author(s): Nyska M, Klin B, Shapira Y, Drenger B, Magora F, Robin GC

Citation: British Medical Journal Clinical Research Ed., November 1986, vol/is. 293/6558(1347-8), 0267-0623

Publication Date: November 1986

Source: MEDLINE

Full Text: Available in fulltext at National Library of Medicine


Author(s): Sprotte G

Citation: Anaesthesist, July 1981, vol/is. 30/7(39-41), 0003-2417

Publication Date: July 1981

Abstract: The 3 in 1 block provides effective analgesia for the greater part of the lower limb. The technique is simple, it requires no special positioning and because of the favorable anatomical situation of the femoral nerve it has a particularly low complication rate. The prompt administration in the acute situation considerably reduces the symptoms and consequences of traumatic shock. One should always bear in mind this effect regional anaesthetic technique in elderly patients with fractured neck of femur. The 3 in 1 block enables almost painfree positioning of the side for the performance of spinal and epidural anaesthesia. Finally the 3 in 1 block can be a most potent method of analgesia in
postoperative pain. With its minimal effects on vasomotor tone and bladder function the 3 in 1 block is in many cases preferable to continuous blockade via an epidural catheter.

Source: MEDLINE


Author(s): White IW, Chappell WA

Citation: Anaesthesia, November 1980, vol./is. 35/11(1107-10), 0003-2409

Publication Date: November 1980

Abstract: Sixty patients with fractured neck of femur and scheduled for surgical correction were randomly allocated to receive one of three anaesthetic techniques: general anaesthesia; spinal analgesia; psoas compartment block. The patients in the local anaesthetic groups also received a light general anaesthetic. There was little difference in the pre-, intra- and postoperative events, and no difference in postoperative mortality.

Source: MEDLINE

The use of fascia iliaca compartment blocks to provide analgesia for fractured neck of femur in the emergency department 2007
Regional Anesthesia and Pain Medicine, Volume 32, Issue 5, Pages 99-99

Care Pathway of Pain Relief for Patients With Fracture Neck of Femur 2008
Regional Anesthesia and Pain Medicine, Volume 33, Issue 5, Pages e262-e262