Regional Anesthesia for Hip Fractures  
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Hip fractures in elderly patients result in significant morbidity and mortality, even with aggressive and timely care from the ED through inpatient stay. Multiple factors contribute to the complications associated with hip fractures including inadequate pain control, high rates of acute delirium and immobility. Mortality rates at 3 months can be as high as 18% (Fletcher). Regional blocks, including 3:1 Femoral nerve block and fascia iliaca compartment block (FICB) are routinely used by anesthesiologists in the peri-operative setting to augment pain control in patients undergoing elective procedures of the hip and knee region. More recently, emergency physicians have started integrating regional anesthesia into their clinical practice, often with the addition of ultrasound guidance, as a resource in pain management for patients with hip fractures. Goals of care include improved pain control and decreased doses of narcotic medications.

This journal club had two goals:
1. Review the current literature on EM performed regional anesthesia in patients with hip fracture
2. Introduce the technique and initiate a discussion about incorporating into our practice at MMC.

STUDY #1

The objective of this study was to determine whether 3-in-1 femoral nerve block is effective when taught and implemented by ED medical staff by assessing for a 40% reduction in pain scores in those patients who received a block. Physician training included a 30 minute educational session, hands on practice on a mannequin and at least one supervised procedure performed on a patient. Patients were randomly assigned to receive 3-in-1 block with bupivicaine plus IV morphine, or IV morphine alone. 50 patients were enrolled. Nerve block patients reported a faster time to lowest pain score (2.88 hours versus 5.81 in control patients). Nerve block patients required less morphine per hour than control patients. There was no difference noted in training level of physician performing the nerve block and nerve block effectiveness.
**STUDY #2**

**Fascia Iliaca Compartment Blockade for Acute Pain Control in Hip Fracture Patients**

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Summary by Tony Owens, MD ; presented by Brent Fowler, MD

Denmark, Funding not disclosed, Evidence  Ib  Evidence obtained from at least one RCT

**Research Question:** Comparison in a randomized fashion of opiates and FICB in hip fracture patients

Hypothesis:  Not stated

**Design:** Randomized, controlled, double blinded, prospective

**Outcome variables:** Primary  10 VRS (verbal ranking score), Secondary VS, pain at rest, pain wit movement, sedation, and nausea at 30, 60 and 180 minutes

**Research setting:** hospital emergency department, Department of Anesthesia, convenience sample (when research participant was on call)

**Subjects and inclusion criteria:** patients presenting to ED with clinical signs of hip fracture, cognitively intact and able to consent

**Exclusion criteria:** refusal, previous hip surgery, prior opiate/glucocorticoid use, alcohol or substance abuse, infection at site, morphine intolerance, neg hip xray

**Patients:** 48, randomized by computer into two groups of 24; groups were well matched with the exception of sex, the placebo (morphine) group was predominantly female 21 versus 14.

**Interventions:** Group A received the block and placebo injection, Group B received morphine (5 mg) and placebo block, both received paracetamol 1 gm po

Investigators collected data, but were blinded as to drug versus placebo

**Data:** Categorical and Continuous

Statistics:  chi-square for categorical, Whitney-Mann for continuous, and Student t test for normally distributed categorical data

**Findings:** FICB showed improvement in pain scores at rest and with 15 degrees of elevation over morphine IM.  Other variables, nausea, vomiting were unchanged and there was a trend to lower O2 sats in the opiate group.  Success of the block was only 67% and attributed to lack of experience.

**Implications for practice:** This is relevant to MMC where approximated 330 patients annually present with hip fracture.  The procedure is brief (avg 4 minutes) and could be augmented with US guidance.  Drugs were inexpensive (mepivicaine) but relatively short acting.  Time to OR at MMC averages 19 hours after arrival.  Bupivicaine or ropivicaine might be alternatives.  There was no discussion about provision for local anesthetic reactions (Intra-lipid) or its costs.

**Level of Evidence:** This procedure is already in use, often with US guidance and long acting LA.  It is currently in use at MMC for preoperative analgesic for total knee replacement and its safety established.