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# Fascia Iliaca Compartment Block Protocol for Hip Fracture

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## **Executive Summary**

### **Title**

Fascia iliaca compartment block protocol for hip fractures

### **Author**

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### **Introduction of the Problem**

There were 281,000 hospital admissions in 2007 in the United States (U.S.) for people over the age of 65 with hip fractures. Patients with hip and proximal fractures in the emergency department (ED) have pain that is often not well controlled with oral and/or intravenous (IV) medications. The use of regional anesthesia in the U.S. is not the mainstay in treatment of acute pain from a hip fracture. The fascia iliaca compartment block (FICB) is a volume based block that is currently performed in the United Kingdom as an adjunctive pain management program in many areas. Fascia iliaca compartment block can improve pain control for patients with hip and proximal femur fractures. Developing a FICB protocol for patients with hip and proximal femur fractures in the ED will improve pain control and decrease pain scores for the patients at a central Illinois hospital.

### **Problem Statement**

Patients with hip and proximal fractures in the ED have pain that is often not well controlled with oral and/or IV medications. FICB improves pain control for patients with hip and proximal femur fractures. Developing a FICB protocol for patients with hip and proximal femur fractures in the ED will improve pain control and decrease pain scores.

### **Literature Review**

The FICB block is a volume based block that is effective for patients with hip fractures. The FICB blocks femoral, lateral cutaneous and obturator nerves (Kumar, Hooda, Kiran, & Devi, 2016). The FICB can be performed in two different techniques. One is a landmark based and the other technique is using ultrasound. The ultrasound guided FICB is more efficacious than the landmark technique (Haines et al., 2012). The most commonly used local anesthetic is a long acting and low concentration agent (i.e. bupivacaine). Decadron added to the local anesthetic has been shown to prolong the duration of the FICB. The FICB decreases the need for oral/IV opioids and improves pain control. The FICB has been shown to decrease length of stay for patients and improve patient satisfaction. Contraindications to the FICB include patient refusal, patient allergy to local anesthetic, infection at the site of injection, bleeding tendency and anticoagulation medications, neurologic deficit in effected extremity, and patient unable to cooperate with block procedure. Williams et al. (2016) performed a study comparing standard preoperative analgesia to standard preoperative analgesia with FICB for patients with femoral neck fractures. Patients treated with standard analgesia plus FICB had reduced mean pain scores at all times (15 minutes after treatment, 2 and 8 hours) compared to the standard analgesia (7.7 to 5.8, 6.1 to 4.1, 5.6 to 4.0). The mean pain scores with movement were less for the FICB with standard analgesia compared to standard analgesia (9.2 to 8.0, 9.0 to 6.0, 8.9 to 6.1). The FICB with standard analgesia required less oramorph than the standard analgesia (6.2 to 2.0).

Chester and Atkinson (2014) performed literature review for fascia iliaca block for proximal femoral head fractures in the ED. Studies included in their literature review demonstrated decrease pain scores for the group treated with FICB. Ritcey, Pageau, Woo, and Perry (2016) performed a systemic review of peripheral block for pain control for hip fractures and femoral head fractures in the ED. All three studies showed an improvement in pain scores.

One studied showed improvement in pain scores to IM morphine, another studied showed improvement in pain scores compared to IV NSAIDs, and the third studied showed improvements in pain scores compared to rectal NSAIDs.

## **Methodology**

### **Goals of the Project**

Increase the number of FICB blocks for patients with hip and femur fractures.

Standardized the way FICB's are performed by anesthesia providers.

Provide an evidence-based practice protocol for FICB.

### **Objectives of the Project**

Discussion on the benefits of the FICB.

Understand dosing for FICB.

Describe contraindications for FICB.

**Setting and Group** The project setting was a central Illinois hospital. The sample population included certified registered nurse anesthetists, anesthesiologists, and registered nurses who assist with blocks.

**IRB Information** An application was submitted to the Institutional Review Board (IRB) of Southern Illinois University Edwardsville for Human Subjects Exempt Research. All Collaborative Institutional Training Initiative programs were completed and turned in with the IRB application. In addition, the protocol, the survey, and the cover letter were submitted. Approval was granted on October 27, 2017.

**Project Design and Tools** The project design is non-experimental. A protocol was created (appendix A) and given to anesthesia providers who performed FICB. The FICB protocol was implemented using a computer based learning tool (appendix B). The Power Point presentation relayed information on the protocol, benefits, contraindications, dosing of the local anesthetic, additional medication that can be added and literature review for FICB. The evaluation of the protocol was obtained after the computer based learning tool presentation. The survey assessed the likelihood of the protocol to be incorporated as a standard of practice for the facility.

### **Strengths of the Project**

Anesthesia providers at the hospital will have a better understanding of the benefits of the FICB.

Patients will be kept safe during FICB.

FICB could be standardized.

### **Weaknesses of the Project**

A new protocol can be stressful to staff.

Adult learners are different from children learners.

Face to face learning may threaten anonymity of survey.

### **Opportunities to the Project**

The protocol can be adopted by hospital for being a benefit to patients and the community the hospital serves.

## **Threats to the Project**

Hospital could deny the protocol.

Pharmacy could refuse to carry the drugs needed or there could be a drug shortage.

Failure of the staff to exercise the protocol.

## **Evaluation**

The survey had five questions (appendix C). Each question was based on a four-point Likert scale. Four representing strongly agree and one representing strongly disagree. The average score for the 5 questions were 4, 4, 3.27, 3.63, 3.45 respectively. A positive reception of the protocol was shown by these scores.

Overall, there was a positive reception of the protocol by the staff at central Illinois hospital. After the PowerPoint presentation there was time available for questions. Questions asked by the staff were answered by the presenter. Staff were grateful for the presentation and for the educational review of the FICB. Staff expressed interest in having presentation and information passed onto their orthopedic surgeons and ER physicians. No further recommendations can be made at this time.

## **Impact on Practice**

The FICB protocol will expand the role of the CRNAs outside of the OR at this facility. The administration of a FICB can impact the outcome for patients with hip fractures with improved pain control. The FICB protocol helps to decrease the number of narcotics taken by hip fracture patients which tend to be elderly. Decreasing the amount narcotics taken by the elderly minimizes undesirable side effects such as delirium, respiratory depression, nausea, vomiting,

drowsiness, hypotension, itching, cough suppression, dry mouth, constipation, and urinary retention. The protocol will serve as the standard for the FICB procedure at the hospital. The staff gained a better understand of the FICB, its benefits, and its anatomy.

## **Conclusions**

The small sample size makes it difficult for the protocol to be applied to every hospital. The healthcare providers shared a positive view on the FICB protocol for their patients and their practice of administering the block. The staff were pleased with the protocol and presentation. Learners were engaged in the PowerPoint presentation by focusing on the presenter. Many positive comments were expressed during the time given for questions and answers. Many of the providers were ready to share information learned from the education presentation with their peers. The positive responses received from survey also encourage the future use of the protocol at the hospital. When the acute pain services start at the hospital the protocol will be utilized by the anesthesia group. This protocol will standardize care for patients receiving a FICB. In the long term, the protocol will benefit the community the hospital serves by decreasing pain scores along with opiate requirements, and increasing patient satisfaction scores. The use of FICB should be consider as a first line treatment for adult hip fracture pain when no contraindications exist for regional anesthesia.

## **Author Contact Information**

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