بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Evaluation of Ultrasound- Guided Quadratus Lumborum Block for Postoperative Analgesia after Hip Surgery

Thesis

Submitted for Partial Fulfillment of Master Degree in
Anesthesia, ICU, and Pain Management

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Amira Yousry Hawas

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List of Abbreviations

Abb.	Full term
ACLS	Advanced cardiovascular life support
ASRA	American society of regional anaesthesia
CNS	Central nervous system
DBP	Diastolic blood pressure
ECG	Electrocardiogram
HR	Heart rate
HS	Highly significant
IQR	Inter-quartile range
IV	Intravenous
LA	Local anesthetics
LAST	Local anesthetics systemic toxicity
LPVS	Lumbar paravertebral space
NIBP	Non-invasive blood pressure
NS	Non significant
NSAID	Nonsteroidal antiinflammatory drug
QL	Quadratus lumborum
S	Significant
SBP	Systolic blood pressure
SpO2	Pulse oximetry
SPSS	Statistical Package for Social Science
TLF	Thoracolumbar fascia
VAS	Visual Analogue Scale

INTRODUCTION

Hip fractures are common amongst the elderly and can often result in fatal consequences. ***Pro***per pain management for acute hip fracture patients can improve patient comfort and reduce complications, morbidity, and mortality ***(Rashid et al., 2014).***

Adequate post operative analgesia is important because improved patient comfort has been associated with increased patient satisfaction, earlier mobilization and lower consumption of opioids ***(Morris & Mir 2015).*** Opioid analgesics are used as a first-line drug for acute pain relief. However, they can cause adverse reactions, and the risk of such reactions is particularly higher in the elderly ***(Lee et al., 2014).***

Side effects of opioids that also lead to patient dissatisfaction, include nausea, vomiting, constipation, urinary retention, and altered sensorium ***(Clarke et al., 2014)***

Furthermore, patients undergoing hip surgery may be exposed to opioids for long periods of time and therefore at high risk to experiencing opioid-related addiction ***(Solberg et al., 2017).***

Thus, there is reason for effective opioid-sparing analgesia following surgery.

Regional anesthesia is an alternative method of pain control that can replace injection of intravenous opioids in patients with hip fractures ***(Levene et al., 2019).***

The quadratus lumborum (QL) block is a regional anesthesia technique originally described in 2007 to provide analgesia for abdominal surgery. Several years later it was found, that this block could also provide analgesia to the hip, and various reports have demonstrated efficacy in the setting of femoral neck fracture ***(La Colla et al., 2017; Hockett et al., 2016; Ueshima et al., 2016 and Jin et al., 2020).***

Aim of the Work

The aim of this study is to evaluate the pain-relieving effect of pre-operative ultrasound guided quadratus lumborum (QL) blocking added to spinal anaesthesia in hip surgery in comparison to spinal anesthesia without QL block.

Chapter 1

ANATOMY

The quadratus lumborum (QL) muscle is an integral part of the thoracolumbar fascia, a myofascial system that covers the posterior area of the human body, involving part of the lower and upper limbs. The QL muscle is flattened and has a quadrangular shape; along with the multifidus and erector spinae muscles, the QL helps to create an antagonist force compared to the muscles of the abdomen ***(Grzonkowska et al., 2018).***

The QL muscle involve the internal surface of the 12^{th} rib and the transverse process of lumbar bodies of L1-L4 that comes from the iliac crest and the iliolumbar ligament ***(Phillips et al., 2008).***

QL comprises three layers with muscle fibers that have different vectors;

The superficial layer is a thin layer, comprising iliocostal muscle fibers (from the iliac crest to the ribs) and iliothoracic (from the iliac crest to the lateral area of the vertebral body of T12, which fibers have a tendinous or even muscular termination.

The intermediate layer comprises lumbocostal muscle fibers (from the transverse processes of the lumbar vertebrae to the 12th rib). They are muscle fibers that vary significantly in size, direction, and thickness.