Salwa Akl

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Salwa Akl

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

A Comparative Study Between Rectus Sheath Block and Quadratus Lumborum Block for Post-Operative Analgesia Following Para-Umbilical Hernia Repair Surgery

Thesis

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Alaa Adel Abd Al-Majeed

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List of Abbreviations

Abb.	Full term
AMPA	*α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid*
ASA	*American Society of Anesthesiologists*
CNS	*Central nervous system*
COX	*Cyclooxygenase*
DBP	*Diastolic blood pressure*
ECG	*Electrocardiogram*
ERK	*Extracellular signal-regulated kinases*
GABA	*γ-Aminobutyric acid*
HR	*Heart rate*
IOM	*Internal oblique muscle*
IV	*Intravenous*
L/M	*Lateral and medial*
LA	*Local anesthetic*
MAO	*Monoamine oxidase*
MKP	*Mitogen-activated protein kinase phosphatase*
PABA	*Para-aminobenzoic acid*
PM	*Psoas major*
QL	*Quadratus lumborum*
QLB	*Quadratus lumborum block*
RA	*Rectus abdominis*
RSB	*Rectus sheath block*
RSD	*Reflex Sympathetic Dystrophy*

List of Abbreviations (Cont...)

Abb.	Full term
SBP	*Systolic blood pressure*
SC	*Subcutaneous tissue*
SD	*Standard deviation*
SpO2	*Oxygen saturation*
SpO_2	*Pulse oximetry*
SPSS	*Statistical package for social sciences*
TA	*Transversus abdominis*
TAM	*Transversus abdominis muscle*
TLR	*Toll-like receptor*
VAS	*Visual Analogue Scale*
WHO	*World Health Organization's*

INTRODUCTION

Postoperative pain management is one of the most important areas of anesthesia, early postoperative mobilization and rehabilitation with minimally associated pain and discomfort is the most desirable quality that has been needed ***(Ayyappan and Santhanakrishnan, 2017).***

Surgical stress response occurring as a result of uncontrolled pain after surgeries severely affects various physiological functions, even leading to increased perioperative morbidity and mortality. Hence, effective post-operative analgesia is an essential component of the care of surgical patients. Regional anaesthesia with local anaesthetic agents not only inhibits the stress response to surgery but also improves the post-operative outcome ***(Sharma et al., 2018).***

Rectus sheath block was first described by ***Schleich*** in ***1899*** as a means of facilitating surgery involving the anterior abdominal wall in adults. The central portion of the anterior abdominal wall is innervated by the ventral branches of the T7–T11 spinal nerve roots; these ventral branches lie between the rectus abdominis muscle and the posterior rectus sheath, and enter the rectus muscle near the midline ***(Snell, 2008)***. As the tendinous intersections of the rectus muscle are not fused to the posterior rectus sheath, local anaesthetic from a single injection

site is able to spread cephalocaudally within this compartment ***(Abrahams et al., 2010)***.

Quadratus lumborum block is an emerging technique for peripheral nerve blockade, which generates an analgesic effect by unilaterally blocking spinal nerves from T6–T9 to L1-L3, considering its wide block range, it has been increasingly used for postoperative analgesia in patients undergoing middle and lower abdominal surgeries, and showed satisfactory results no matter in single injection mode or continuous infusion mode ***(Srinivas, 2018*)**.

Aim of the Work

The aim of this study is to compare the effect of ultrasound guided bilateral quadrats lumborum block versus bilateral ultrasound guided rectus sheath block on post-operative analgesia in patients undergoing para-umbilical hernia repair by measuring and comparing postoperative VAS score and first time to ask for rescue analgesia and the total amount of opioid (pethidine) given in the first 24 hours.

Chapter 1

PATHOPHYSIOLOGY OF PAIN

An Overview of Pain

The International Association for the Study of Pain (IASP) describes pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." When unexpected exposure to potentially harmful stimuli occurs, pain manifests as a reflexive withdrawal response accompanied by a motivational reaction, most frequently a feeling of unpleasantness. The sensory process of detecting the "actual or potential tissue damage" is called nociception ***(Kyranou & Puntillo, 2012)***.

Pain is often described as being superficial, deep, or visceral:

Superficial somatic pain arises from skin, subcutaneous tissues, and mucous membranes and is often described as a sharp, pricking, throbbing, or burning sensation.Deep somatic pain is associated with muscles, tendons, joints, or bones and usually has a dull, aching quality and is less well-localized. Visceral pain arises from disease or dysfunction of internal organs or their coverings (parietal pleura, pericardium, or peritoneum). True visceral pain is dull, diffuse, and usually midline ***(Kyranou & Puntillo, 2012).***