



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرو فيلم



MONA MAGHRABY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY



Analgesic Sparing Effect of Dexamethasone with Levobupivacaine in Quadratus Lumborum Block in Patients Undergoing Unilateral Inguinal Hernia Repair

Thesis

*Submitted For Partial Fulfillment of Master Degree in
Anesthesia, Intensive Care and Pain Management*

By

Yasmin Tarek Ali Ahmed El Shahawy

M.B,B.Ch., Faculty of Medicine, Ain Shams University

Under supervision of

Prof. Dr. Sherif Samir Wahba

*Professor of Anesthesia, Intensive Care and Pain Management
Faculty of Medicine, Ain Shams University*

Dr. Khaled Mostafa Khalaf

*Lecturer of Anesthesia, Intensive Care and Pain Management
Faculty of Medicine, Ain Shams University*

Dr. Amr Fouad Hafez

*Lecturer of Anesthesia, Intensive Care and Pain Management
Faculty of Medicine, Ain Shams University*

*Faculty of Medicine
Ain Shams University
2021*

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا أنك لا تعلم لنا
إلا ما علمتنا أنك أنت
العليم العظيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgment

*First and foremost, I feel always indebted to **ALLAH**,
the Most Kind and Most Merciful.*

*I'd like to express my respectful thanks and profound gratitude to **Prof. Dr. Sherif Samir Wahba**, Professor of Anesthesia, Intensive Care and Pain Management, Faculty of Medicine, Ain Shams University for his keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.*

*I am also delighted to express my deepest gratitude and thanks to **Dr. Khaled Mostafa Khalaf**, Lecturer of Anesthesia, Intensive Care and Pain Management, Faculty of Medicine, Ain Shams University, for his kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.*

*I am deeply thankful to **Dr. Amr Fouad Hafez**, Lecturer of Anesthesia, Intensive Care and Pain Management, Faculty of Medicine, Ain Shams University, for his great help, active participation and guidance.*

Yasmin Tarek

List of Contents

Title	Page No.
List of Tables	i
List of Figures	ii
Introduction	1
Aim of the Work	3
Review of Literature	4
Patients and Methods.....	43
Results	49
Discussion	64
Conclusion	69
Summary	70
References	73
Arabic Summary	—

List of Tables

Table No.	Title	Page No.
Table (1):	Descriptive for demographic and characteristics of the studied cases.....	49
Table (2):	Comparison between group A and group B regarding demographic and characteristics of the studied cases.	51
Table (3):	Comparison between group A and group B regarding HR follow-up.....	54
Table (4):	Comparison between group A and group B regarding systolic BP.....	56
Table (5):	Comparison between group A and group B regarding diastolic BP.....	58
Table (6):	Comparison between group A and group B regarding NRS.	60
Table (7):	Comparison between group A and group B regarding 1st rescue analgesia and total pethidine consumption.....	62

List of Figures

Fig. No.	Title	Page No.
Figure (1):	Nerves of the abdominal wall.	9
Figure (2):	Showing nerve supply posterior abdominal wall	13
Figure (3):	Local anesthetic structure	19
Figure (4):	Probe position for anterior QLB	38
Figure (5):	Ultrasound images of anterior QLB.....	38
Figure (6):	Probe position for subcostal QL block	38
Figure (7):	Ultrasound images of subcostal QL block.....	39
Figure (8):	Lateral QL block	39
Figure (9):	Ultrasound images of lateral QLB.....	40
Figure (10):	Ultrasound images of posterior QLB.....	40
Figure (11):	Ultrasound images of intramuscular QLB.....	41
Figure (12):	Distribution for sex of the studied cases.	50
Figure (13):	Distribution for ASA classification of the studied cases.	50
Figure (14):	Comparison between group A and group B regarding mean age of the studied cases.....	52
Figure (15):	Comparison between group A and group B regarding sex distribution of the studied cases.	52
Figure (16):	Comparison between group A and group B regarding BMI distribution of the studied cases.	53
Figure (17):	Comparison between group A and group B regarding duration distribution of the studied cases.	53

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (18):	Comparison between group A and group B regarding HR follow-up.....	55
Figure (19):	Comparison between group A and group B regarding systolic BP.....	57
Figure (20):	Comparison between group A and group B regarding diastolic BP.	59
Figure (21):	Comparison between group A and group B regarding NRS.....	61
Figure (22):	Comparison between group A and group B regarding 1st rescue analgesia.	63
Figure (23):	Comparison between group A and group B regarding total pethidine consumption.	63

INTRODUCTION

Inguinal hernioplasty is the third most commonly performed surgery in adults after appendicitis and proctologic disorders (*Callesen et al., 2002*). Various modalities like intravenous nonsteroidal anti-inflammatory drugs (NSAIDs), opioid analgesics, regional anesthetic techniques like epidural and truncal blocks are used for the treatment of post-operative pain. Among them, regional anesthetic techniques are preferred as they provide effective control of pain, reduced requirement of opioids, earlier mobilization and better patient satisfaction (*Wahal et al., 2018*).

Quadratus lumborum block (QLB) is an abdominal interfascial plane block, which was first described as a variant of the transversus abdominis plane block (*Blanco, 2007*). The peculiar feature of this block is that it not only blocks sensory nerves but also the visceral nerves. The QLB has been shown to provide effective postoperative analgesia in inguinal surgery, laparoscopic surgery and cesarean deliveries (*Ueshima et al., 2007*).

Multiple adjuncts to local anesthetics such as epinephrine, clonidine or sodium bicarbonate have been examined for their potential to prolong analgesia after regional anesthesia, but with disappointing side effects (*Axelsson and Gupta, 2009*).

Dexamethasone is a glucocorticosteroid with anti-inflammatory properties that is used by anesthesiologists as a systemic, epidural, or perineural analgesic adjunct (***Gordon et al., 2016).***

AIM OF THE WORK

The objective of this study is to assess the analgesic sparing effect of adding dexamethasone to levobupivacaine in quadratus lumborum block in patients undergoing unilateral inguinal hernia repair under general anesthesia.

REVIEW OF LITERATURE

Anatomical and physiological consideration

The abdominal wall is a continuous cylindrical myofascial structure that binds to the thoracic cage superior, the pelvic girdle inferior, and the spinal column to the posterior. Boundaries include the anterior, two lateral and one posterior abdominal wall (*Chin et al., 2017*). The anatomic planes of the abdominal wall are made of multiple muscular and fascial layers that interdigitate together to form a protective musculofascial layer that protects the visceral organs and provides strength to the body's trunk (*Parashar, 2016*).

Anatomy of the posterior abdominal wall:

The posterior abdominal wall is defined as the area **medial** to the lateral abdominal walls and **limited anteriorly** by the posterior part of the parietal peritoneum (*Parashar, 2016*).

Quadratus lumborum muscle

It is a muscle that extends from the iliac crest to the 12th rib as well as additional sets of fibers running from both the 12th rib and iliac crest to the transverse processes of the first to fourth lumbar vertebrae. Its lateral border is a free border, which would be palpable when placed under light tension. A sheet of thoracolumbar fascia lies both anterior and posterior to

quadratus lumborum (QL), thereby wrapping it in a fascial casing. These fascial extensions merge laterally and attach to the transverse abdominis, thereby providing a tensional element of support for the lumbar region. The QL is often reasonably grouped with the psoas muscles as a deep lateral muscle of the trunk, providing a portion of the deep abdominal wall. It is supplied by the subcostal nerve and branches of the lumbar plexus (*León Guevara, 2011*).

Psoas major:

It is a triangular, bilaterally paired muscle that forms part of the floor of the paravertebral area. It can be divided into an anterior and a posterior mass, so that the anterior part gives the bands attached to the bodies and the intervertebral discs of the located close vertebrae, while the posterior part attached to the body of the first fifth lumbar vertebrae. The posterior part of the psoas major has the lumbar plexus fibers that pass through it. There are also attachments to the anterior aspect of the L1 to L4 transverse vertebrae (*Parashar, 2016*).

Psoas major, together with iliacus (referred to as iliopsoas), is a member of the locomotive muscles due to their insertion and involvement in the lower limbs. For completion, iliacus originates from the inner lip of the iliac crest, the upper two-thirds of the inner iliac fossa, the ala of the sacrum, and the iliolumbar and sacroiliac ligaments (*Parashar, 2016*).