



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY



Effect of Ultrasound Guided Quadratus Lumborum Block as Post-Operative Analgesia after Laparoscopic Cholecystectomy

Thesis

*Submitted for Partial Fulfillment of
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List of Abbreviations

| Abb. | Full term |
|--------------|--|
| AAGBI | Association of Anesthetists of Great Britain and Ireland |
| AMPA | Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid |
| COX | Cyclooxygenase |
| CrCl | Creatinine clearance |
| ECG | Electrocardiography |
| EO..... | External oblique muscle |
| ERK | Extracellular signal-regulated kinases |
| HR | Heart rate |
| IO..... | Internal oblique muscle |
| IV | Intravenous |
| LAs | Local anesthetics |
| LAST | Local anesthetics systemic toxicity |
| M6G | Morphine 3-glucuronide (M3G) and morphine 6-glucuronide |
| MAO | Monoamine oxidase |
| MKP | Mitogen-activated protein kinase phosphatase |
| NIBP | Non-invasive blood pressure |
| NRS | Numerical rating scale |
| NSAIDs | Non-steroidal anti-inflammatory drugs |
| PM | Psoas major |
| PONV | Postoperative nausea and vomiting |
| QL..... | Quadratus lumborum |

List of Abbreviations *cont...*

| Abb. | Full term |
|------------|---|
| QLB | Quadratus lumborum block |
| RSD | Reflex sympathetic dystrophy |
| SD | Standard deviation |
| SpO2 | Pulse oximetry |
| SPSS | Statistical package for social sciences |
| TA | Transversus abdominis |
| TLR | Toll-like receptor |
| VAS | Visual Analogue Scale |

INTRODUCTION

The proper management of post-operative pain ensures early ambulation of patients and obviates many post-operative complications (*Sinha et al., 2016*).

As a part of multimodal analgesic regimen, opioids are required initially to achieve effective analgesia. However, opioids are associated with dose-dependent side-effects including nausea, vomiting, pruritus, sedation and respiratory depression (*Belavy et al., 2009*).

Quadratus lumborum block (QLB) 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 post-operative analgesia in patients undergoing middle and lower abdominal surgeries and showed satisfactory results (*Srinivas, 2018*).

The current study will compare the effect of ultrasound guided quadratus lumborum block to provide prolonged analgesia post-operatively. The outcome measures will be evaluated with the pain score at various intervals using visual analogue scale.

AIM OF THE WORK

The aim of this study has been to test the effect of ultrasound guided quadratus lumborum block for providing post-operative analgesia after laparoscopic cholecystectomy.

Chapter 1

ANATOMICAL CONSIDERATIONS

Gallbladder

The **gallbladder** is a gastrointestinal organ located within the right hypochondrial region of the abdomen. This intraperitoneal, pear-shaped sac lies within a fossa formed between the inferior aspects of the right and quadrate lobes of the liver.

The primary function of the gallbladder is to concentrate and store **bile** which is produced by the liver. As part of the gustatory response, the stored bile is then released from the gallbladder in response to cholecystokinin.

Anatomical Relations

The gallbladder is entirely surrounded by **peritoneum** and is in direct relation to the visceral surface of the liver.

It lies in close proximity to the following structures:

- **Anteriorly and superiorly** – inferior border of the liver and the anterior abdominal wall.
- **Posteriorly** – transverse colon and the proximal duodenum.

- **Inferiorly** – biliary tree and remaining parts of the duodenum. (*Tebala et al., 2004*)

Anatomical Structure (figure 1)

The gallbladder has a storage capacity of 30-50 ml and it lies anterior to the first part of the duodenum.

It is typically divided into three parts:

- **Fundus** – the rounded, distal portion of the gallbladder. It projects into the inferior surface of the liver in the mid-clavicular line.
- **Body** – the largest part of the gallbladder. It lies adjacent to the posteroinferior aspect of the liver, transverse colon and superior part of the duodenum.
- **Neck** – the gallbladder tapers to become continuous with the cystic duct, leading into the biliary tree.
 - The neck contains a mucosal fold, known as Hartmann's Pouch. This is a common location for gallstones to become lodged, causing cholestasis.

(Tebala et al., 2004)