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Comparative Study between Ultrasound Guided Ilioinguinal/Iliohypogastric Nerve Blocks and caudal Epidural Anesthesia in lower Abdominal Surgery in Pediatric Anesthesia

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Ain shams university
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2011

بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا إلا ما علمتنا

إنك أنت العليم الحكيم﴾

صدق الله العظيم

(البقرة : ٣٢)

Acknowledgements

THANKS ARE ALL TO **GOD**, FOR BLESSING ME THIS WORK UNTIL IT REACHED ITS END, AS A LITTLE PART OF HIS GENEROUS HELP THROUGHOUT MY ENTIRE LIFE.

I WOULD LIKE TO EXPRESS MY DEEPEST GRATITUDE TO **PROF. DR. NABIL ABD EL MOATTI,** **P**ROFESSOR OF **A**NAESTHESIA AND **I**NTENSIVE **C**ARE, **F**ACULTY OF **M**EDICINE, **A**IN **S**HAMS **U**NIVERSITY, FOR HIS SUPPORT, GUIDANCE AND ENCOURAGEMENT.

IT HAS BEEN AN HONOUR WORKING UNDER THE SUPERVISION OF **PROF. DR. HANY MOHAMED EL ZAHABY,** **P**ROFESSOR OF **A**NAESTHESIA AND **I**NTENSIVE **C**ARE, **F**ACULTY OF **M**EDICINE, **A**IN **S**HAMS **U**NIVERSITY, WHO HELPED ME IN EVERY WAY HE COULD.

I'M GREATLY INDEBTED TO **ASSISTANT PROF DR. EMAD EL DIN MANSOUR,** ASSISTANT **P**ROFESSOR OF **A**NAESTHESIA AND **I**NTENSIVE **C**ARE, **F**ACULTY OF **M**EDICINE, **A**IN **S**HAMS **U**NIVERSITY, WHO PROVIDED ME WITH INTELLECTUAL AND TECHNICAL SUPPORT FROM THE VERY BEGINNING OF THIS WORK.

I'M GREATLY THANKFUL TO **D**R. **NOHA EL SAYED HUSSIN,** **L**ECTEURER **A**NAESTHESIA AND **I**NTENSIVE **C**ARE, **F**ACULTY OF **M**EDICINE, **A**IN **S**HAMS **U**NIVERSITY, FOR GREAT HELP AND COOPERATION DURING THE WHOLE WORK.

AZZA LOTFY

CONTENTS

List of Tables

List of Figures

List of Abbreviations

Abbreviation	Meaning
ASA	American society of anesthesiologists
ASIS	anterior superior iliac spine
b/m	beat per minute
CBC	Complete blood count
cm	Centimeter
CNS	Central nervous system
D_5W	Dextrose 5% in water
DGC	Depth-gain compensation
ECG	Electrocardiogram
Hz	Hertz
IH	Iliohypogastric
IN	Ilioinguinal
IV	Intravenous
Kg	Kilogram
kHz	Kilohertz
LA	Local anesthetic
m/sec	Meter per second
MAC	Minimum alveolar concentration
MHz	Megahertz
ml	Milliliter
mm	Millimeter
mmHg	Millimeter mercury
PL	Pulse length
PRF	Pulse Repetition Frequency
TGC	Time gain compensation
US	Ultrasound
USGRA	Ultrasound-guided regional anesthesia

mcg/Kg	Microgram per kilogram
MOPS	Modified Objective Pain Score
ml/kg	Milligram per kilogram
MAP	Mean arterial blood pressure
min	Minute
mg/kg	Milligram per kilogram
P	Probability
SD	Standard deviation
RR	Respiratory rate
HR	Heart rate
Hr	Hour
CHIPPS	Children and Infants Postoperative Pain Scale
vs.	Versus
%	Percent
2D	Two-dimensional

INTRODUCTION

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Over 20 years ago, a survey reported that 40% of pediatric surgical patients experienced moderate or severe postoperative pain and that 75% had insufficient analgesia. Since that, a range of safe and effective techniques have been developed to overcome this problem ***(Lonnqvist and Morton, 2005).***

Regional anesthetic techniques have been gained considerable popularity for use with pediatric patients. The primary advantage of regional supplementation is lowering general anesthetic requirements intraoperatively and providing good postoperative pain relief ***(Morgan and Mikhail, 1996).***

Caudal anesthesia is the most frequently used regional technique in children; accounting for almost 50% of all regional techniques ***(Dalens, 1995).*** Its popularity is due its simplicity and high success rate ***(Prosser et al; 1997).***

The ilioinguinal/iliohypogastric nerve block is also a popular regional anesthetic technique for surgical procedures in the sensory area of the ilioinguinal and iliohypogastric nerves for inguinal surgery (inguinal hernia repair or orchidopexy) ***(Markham et al., 1986),*** but the failure rate with this 'blind' technique is a disappointing 20–30%, even in experienced hands. In addition, complications such as colonic or small bowel punctures and pelvic hematoma have been described ***(Amory et al., 2003).***

The use of ultrasound in ilioingunal/iliohypogastric nerves block can greatly improve the efficacy of the block as ultrasound

allows real time visualization of both nerves and show the spread of local anesthetic injected around the nerve it also reduces the risk of complications associated with blind technique ***(Willschke et al., 2005).*** The use of ultrasound significantly reduces the amount of local anesthetic used. This is particularly relevant for neonates and infants who are at risk of local anesthetic toxicity ***(Smith et al. 1996).***

AIM OF THE WORK

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This study evaluated the use of ultrasound-guided ilioinguinal/iliohypogastric nerve blocks in pediatric patients regarding the efficacy of the block, the dose of local anesthetic administered and the incidence of complication in comparison with caudal epidural anesthesia regarding the efficacy, the onset of action and the duration of action of the block.

REVEIW OF LITERATURE