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Comparative Study between Ultrasound Guided TransversusAbdominis Nerve Block and Caudal Epidural Anesthesia in pediatric patients undergoing lower Abdominal Surgery.

Thesis submitted for partial fulfillment of M.D. degree in anesthesiology
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بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم﴾

صدق الله العظيم

(البقرة : ٣٢)

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List of Abbreviations

Abbreviation	Meaning
2D	Two-dimensional
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	millimetre mercury
PL	Pulse length
PRF	Pulse Repetition Frequency
PZT	Lead zirocorantetitanate
TGC	Time gain compensation
TAP	TransversusAbdominis Plan

List of Abbreviations (cont...)

US	Ultrasound
USGRA	Ultrasound-guided regional anesthesia
mcg/Kg	Microgram per kilogram
MOPS	The 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

Introduction

INTRODUCTION

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 ***(Lonnqvistand Morton, 2005).***

Regional anesthetic techniques have 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 ***(Morganand 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 etal; 1997).***

The transversusabdominis plane (TAP) block is a recently introduced technique of locoregional anesthesia for procedures that involve the abdominal wall ***(O'Donnell et al; 2006).*** Which helps in pain relief over the entire anterior

abdominal wall and reduction of the analgesia requirements in the early postoperative period ***(French 2009), (Mukhtar, Singh 2009).***

Classically, the TAP block was described by Rafi and McDonell as a blind "double-pop" technique using a blunt needle introduced through the external and internal oblique muscles and fascia at the iliolumbar triangle of Petit ***(Rafi 2001), (McDonnell et al; 2007).***

Because there is no distinctly palpable triangle of Petit in children, ultrasound may be especially valuable for determining the point of needle puncture during this block,So the transversusabdominis plane can be accessed anywhere between the iliac crest and costal margin behind the anterior axillary line also a higher subcostal approach may block the upper thoracolumbar nerves more effectively than a lower approach immediately above the iliac crest ***(Bani, &Santhanam 2010).***

Aim Of The Work

AIM OF THE WORK

This study evaluated the use of ultrasound-guided TransversusAbdominis Block in pediatric patients undergoing lower abdominal surgeries in comparison with caudal epidural anesthesia regarding the efficacy, the onset of action, duration of action of the block and the incidence of complication.

Reveiw Of Literature