The Efficacy of preincisional Local Xylocaine Injection on Postoperative Pain After Caesarean Section

Thesis

Submitted for partial fulfillment of Master Degree
In Obstetrics and Gynecology

Presented by
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Introduction

- Postoperative pain management is one of the important issues in surgery which has significant effects on the health care system. Postoperative pain leads to delayed patient ambulation, prolongation of hospitalization, increased atelectasis, vascular thrombosis and ultimately patient dissatisfaction.
  (Shapiro A, et al, 2000)
- Administration of analgesic drugs postoperatively results in pulmonary function improvement by relieving patient's pain, and is accompanied by decreased constipation, reduction in the side effects of vascular thromboembolism and shortening of the convalescence period
  (Azin A, et al, 2007.)
- Many reports have discussed the treatment of patients suffering after operation. Narcotics are not without danger; they also vary considerably in effectiveness. Hypnosis will reduce pain but is difficult to achieve and requires special training for the operator. Despite considerable effort the problems of treating postoperative pain remain.
  (Zohar E, et al 2005)
- The most appropriate method for the treatment of postoperative pain after cesarean delivery remains uncertain.Options currently used include the use of periodic injections of parenteral narcotics either intramuscularly or intravenously, oral narcotics with or without concomitant nonsteroid anti-inflammatory agents, and continuous epidural anesthesia. Narcotic use in the postpartum patient is associated with decreased mentation, slow return of bowel function, and passage of narcotics in the breast milk.
  (Fredman B, et al, 2000)

- The infiltration of local anesthesia into the wound during caesarean delivery appears to be effective in reducing postoperative narcotic requirements. This study is particularly important in light of the growing number of women giving birth by caesarean section all around the world. Preventing or reducing the postoperative pain and narcotic use allows good well-being of the mother, enhance bonding and breast feeding. (Azin A, et al, 2007)
- **Research question**

  Is the periincisional local xylocain injection effective or not on post operative pain after caesarean section?
- **Research haypothesis**

  xylocaine infiltration in the rectus sheath space and the subcutaneous tissue for Caesarean delivery before wound closure leads to a reduction in the overall consumption of analgesics especially in the first 24 hours, and also significantly increases the time interval until the first request for an analgesic.
- **Analysis & Outcomes**

  The main outcome measure is the postoperative pain sensation after ceaserian section during the first 24 hours after operation using 10mm visual analogue scale**.**
- **Clinical application & Value**

  In general, we conclude that local anesthesia infiltration in the rectus sheath space and surgical wound was effective in reducing postoperative pain, VAS and opioids consumption in women having a CS.This technique could be considered as an integral part of the analgesic protocol in patients scheduled for CS. It aims to give optimal pain relief with minimal side effects, without interfering with the mother child relationship, allowing breast feeding and favorising postoperative rehabilitation.

Aim of the Study

To find out the efficacy of Periincisional local xylocaine injection in controlling post operative pain after elective lower segment caesarean section.

Patients and Methods:

- **Site**

  The department of obstetrics & gynecology,, Faculty of Medicine, Ain Shams University and Bolak El Dakror Hospital.

- **Type of the study**

  The study will be performed as randomized , prospective, controlled Trail .

- **Number of patients**

  One Hundred and fifty parturient undergoing elective caesarean delivery for various indications will be enrolled into this study after giving their informed consent to this participation.

- **Sample size jastification**

  Raosoft programme was used for sample size calculation guided by the following data:

  - Power of the test =80% (1-β)
  - Accepted confidence level =95% (1-α)
  - Estimated population size 10000
  - Accepted margin of error =5%
  - Response distribution =70%
  - Total sample =150 (2 equal groups)

- **Method of randomization**

  Simple random sample

  This is done by assigning a number to each of the units in the sampling frame.then select our sample size using random numbers using abox or computer.

- **Inclusion criteria**

  Candidates for non-emergency caesarean section

- **Exclusion criteria**
    - Emergency caesarean section
    - Known or suspected sensitivity to local anesthesia
    - Pre-eclamptic toxemia
    - Affected liver function
    - Lack of adequate verbal communication
    - History of cardiovascular disease
    - History of pulmonary disease
    - History of renal disease
    - History of neurological disease
    - History of metabolic, infectious diseases
- **Sample methodology**

  The participating patients will randomly assigned to two groups, the xylocaine group (A) (n=75) and the control or saline (B) (n=75), based on random numbers table. Group A patients will receive 20 ml of 1% xylocaine at the site of skin incision. Group B patients will receive 20ml of placebo (0.9%Nacl 20ml to incision site)
- **Steps**

  Patients undergoing lower segment caesarean section through a pfannenstiel incision. In all cases, a standard spinal anesthesia will be administrated such that a sensory block up to T6 level is built and no opioid drug will be used during and before anesthesia. The pain will be assessed by using the standard 10 mm visual analog scale (vas) for pain scoring and it will be explained to the patient during the preoperative visit.

  Case group will receive the infiltrations in the subcutaneous tissue and rectus sheath before closure of the skin. The patients will receive opioids (pethidine) as a postoperative analgesia, on demand and when visual analogue score is equal or more than four. Observations concerning opioid consumption and the time

for the first analgesic request will be documented. The total dose of analgesic drug is calculated for each patient. Postoperative pain will be evaluated at 30 minutes, 2, 4, 6 and 24 hours after operation using 10 mm visual analogue scale by the nurse, who will be unaware of the treatment group.

Our proposed study will examine whether peri incisional infiltration of the skin cut site can attenuate postoperative pain after cesarean section.

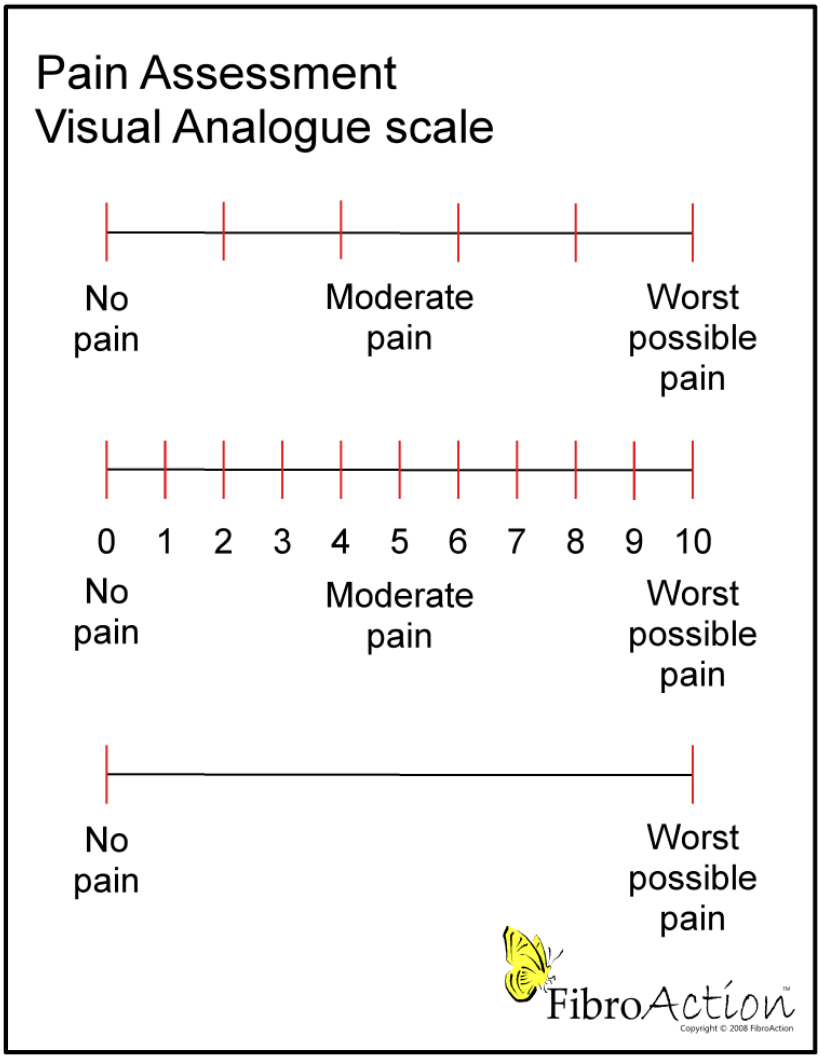
The following fulfillments and data will be recorded in every patient (age, weight, height, gravidity, parity, gestational age, anesthetic time, surgery time, incision length, ambulation time, hospital time).

- **Visual analogue scale (VAS)**

  The Visual Analogue Pain Scale is a simple assessment tool consisting of a 10 cm line with 0 on one end, representing no pain, and 10 on the other, representing the worst pain ever experienced.

  The visual analogue scale (VAS) is frequently used method for the assessment of variations in intensity of pain. In clinical practice the percentage of pain relief, assessed by VAS, is often considered as a measure of the efficacy of treatment. However, the validity of VAS estimates performed by patients with chronic pain may be unsatisfactory. Two types of VAS, an absolute and a comparative scale, were compared with respect to factors influencing the reliability and validity of pain estimates.

  The McGill Pain Questionnaire can be used to evaluate a person experiencing significant pain and it includes a number of useful pain descriptions. It can be used to monitor the pain over time and to determine the effectiveness of any intervention and it takes note of anything that worsens pain. (Harper K, and Bell S 2006)


Pain Assessment
Visual Analogue scale
No pain
Moderate pain
Worst possible pain
0 1 2 3 4 5 6 7 8 9 10
No pain
Moderate pain
Worst possible pain
No pain
Worst possible pain
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Data Sheet

Xylocaine (N=75) Control (N=75)

Age (yr)
Weight (kg)
Height (cm)
Gravdity
Parity
Gestational age (wk)
Anesthetic time (min)
Surgery time (min)
Incision length (cm)
Ambulation time (hour)
Hospitlaizationtime (day)

INTRODUCTION

Caesarean delivery is a common surgical procedure and rates are increasing ***(Ecker and Frigoletto, 2007)***. Postoperative pain is the greatest concern for women during and after caesarean delivery, as demonstrated by a recent survey conducted by ***Carvalho et al., 2010).***

Postoperative pain may be severe, last at least 48 to 72 hrs, and may also lead to delayed patient ambulation, recovery, prolongation of hospitalization, increased atelectasis, vascular thrombosis and ultimately patient dissatisfaction. Pain relief and patient satisfaction are still inadequate in many cases ***(Angle et al., 2002).***

Chronic pain "lasting more than 3months after caesarean delivery" has emerged as a problem in more than 10% of individuals ***(Nikolajsen et al., 2004; Kehlet et al., 2006).***

Interestingly, recall of severe acute postoperative pain appears to be a factor involved in development of chronic postoperative pain after caesarean delivery ***(Pan, 2006).***

As a result of their predictable analgesic and anesthetic sparing properties; opioids analgesic drugs are often administered during the postoperative period; however, they are associated with many side effects such as dizziness, respiratory depression, paralytic ileus, nausea, vomiting, and urinary retention to control and treat pain, these drugs need to be frequently injected either intravenous (IV) or intramuscular

(IM). In most cases where pain control is affected by the administration of opioids analgesic and based on patient requirement and demand, sufficient analgesia does not usually develop ***(Bamigboye and Hofmeyr, 2010).***

Certainly, analgesic drugs avoiding the above side effects and providing better and longer lasting postoperative analgesic effect are sought. Because of analgesic properties and lack of opioids induced adverse effects; local anesthetic drugs are increasingly used in the treatment of surgical pain. The rationale behind the use of pre-emptive anesthesia "local anesthetic given during the operation to prevent or reduce pain afterwards" is to stop pain from starting by blocking the usual response of nervous system to pain. Elimination of some of the superficial components of the pain after caesarean delivery could modulate the perception of deeper visceral pain .The data from previous studies suggest that the infiltration of local anesthesia into the wound during caesarean delivery appears to be effective in reducing postoperative narcotic requirements ***(Azin et al., 2007).***

This study is particularly important in light of the growing number of women giving birth by caesarean section (CS) all around the world. Preventing or reducing the postoperative pain and narcotic use allows good well-being of the mother, enhance bonding and breast feeding.