

## Pfannenstiel Incision Infiltration with Ropivacaine's Analgesic Efficacy

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### DESCRIPTION

The number of Caesarean sections is increasing constantly in European countries with the aim of improving foetal prognosis; about 20% of deliveries are performed under Caesarean section. Commonly, a caesarean section causes moderate to severe discomfort that lasts for 48 hours. 3-5 Intrathecal or parenteral opioids are commonly given after Caesarean section but they convey a risk of complications such as urinary retention, pruritus, nausea and vomiting that preclude patient's comfort. 6-9 On the other hand, non-opioid systemic analgesics are not powerful enough to allow good pain control after Caesarean section. The aim of this study is to examine the quality of analgesia provided by the infiltration of a solution of 7.5mg/ml ropivacaine in Pfannenstiel incision for Caesarean sections and to assess the reduction in the overall analgesic consumption of both opioid and non-opioid agents, in the first 24 postoperative hours.

This study shows that surgical incision ropivacaine 7.5mg/ml injection dramatically reduces and prolongs the pain-free interval after Caesarean section and decreases the rescue analgesic demand. Previous studies have demonstrated that parietal incision infiltration was effective after parietal surgery such as inguinal hernia repair. Five trials on incisional local anaesthesia for abdominal surgery postoperative pain reduction were reported by Moiniche. All of these studies demonstrated that a VAS decrease of between 25 and 50 mm led to a reduction in pain levels. In three investigations, the postoperative pain scores decreased from 1 to a maximum of 4 hours. In the study carried out by the pain scores were reduced in the first 24 hours, but not from the 24th to 48th hour. Pain scores were reduced up until 48th hour after surgery. The duration of analgesia was significantly prolonged at 2-7 hours in the four studies that measured the time from infiltration to the first request for analgesics. There after Tverskoy et al. used a fixed analgesic regimen in their study design, but in the four other studies a significant reduction (approximately 50%) in

supplementary analgesic consumption was found compared to the control group.

Other studies have previously demonstrated that incisional infiltration was effective after Caesarean section. In addition the technique is safe since several studies have demonstrated that the plasma concentration of ropivacaine remains below the toxic threshold provided, the dose is limited to less than 300 mg. One may argue that spinal sufentanil and/or morphine may ensure effective analgesia without the need for an alternative technique such as parietal infiltration. But based on this finding, it appears that a continuous parietal infiltration might be modified to last throughout the entire uncomfortable postoperative period. Numerous investigations on the effectiveness of postoperative analgesia produced with continuous infusions, instillations, and, more recently, infiltrations of ropivacaine in surgical wounds have been conducted since the early 1990s. The use of systemic analgesics in the first 24 postoperative hours has significantly decreased because to these innovative approaches, which have also improved the quality of analgesia. The epileptogenic threshold in humans for ropivacaine toxicity is unclear. Neurological symptoms start to occur in healthy volunteers after receiving an intravenous infusion of ropivacaine at doses of 4 300 ng to 600 ng/ml. Local anaesthetics provide anti-inflammatory effects that are not dependent on sodium channel blockers. Polynuclear neutrophils' morphology is changed by local anaesthetics, which decreases their adhesion to the endothelium and increases their transport to the site of inflammation.

### CONCLUSION

Following a Caesarean section, ropivacaine 7.5mg/ml postoperative infiltration of the surgical incision is helpful in providing analgesia for several hours while lowering systemic analgesic intake. The use of this method in patients who are scheduled for Caesarean sections could be regarded as a crucial component of the analgesic regimen.

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