



EFFICACY OF TRANSVERSUS ABDOMINIS PLANE BLOCK AS POST OPERATIVE ANALGESIA IN CAESARIAN SECTION

Anaesthesiology

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KEYWORDS

Transversus abdominis plane block, Spinal anesthesia, Caesarian section

INTRODUCTION:

Transversus Abdominis Plane Block (TAPB), described as administration of local anesthetic between the fascia of internal oblique and transversus abdominis muscles, is frequently used in postoperative pain management following gynecological, obstetric, and other surgeries.

Spinal anesthesia is a commonly performed method in caesarian section operations because it induces rapid and effective anesthesia and is technically easy to perform. Furthermore, it is advantageous as it helps to avoid unsuccessful intubation, aspiration of gastric content, and use of depressant agents. However, despite these advantages, it produces inadequate post-operative analgesic effect.

Currently, treatment of postoperative pain relies mainly on opioids, Non-Steroid Anti-Inflammatory Drugs (NSAID), and local anesthetics administered via regional techniques. Although opioids provide efficient analgesia, their serious side effects including respiratory depression, sedation, postoperative nausea and vomiting, urticaria, urinary retention, ileus, and constipation which may cause prolonged hospital stay. NSAID's that seem to be an alternative to opioids, on the other hand, may cause nausea, dyspepsia, peptic ulcer, perioperative acute renal failure, bleeding disorders, bronchospasm, and anaphylactic reaction.

Objective:

In this study, we evaluated the efficacy of Transversus Abdominis Plane Block (TAPB) for postoperative analgesia in patients who underwent caesarian section operation under spinal anesthesia.

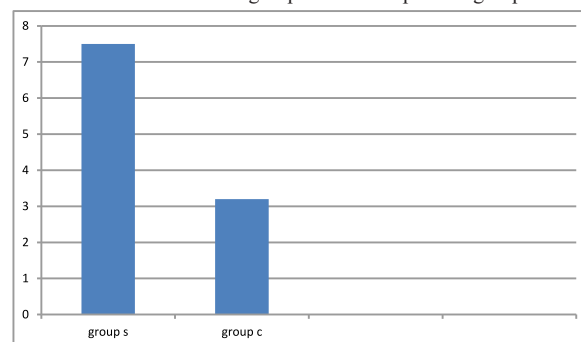
METHOD AND MATERIAL:

This study included a total of 60 patients aged between 18-45yrs, ASA I and II, who underwent elective Caesarian section under spinal anesthesia. Patients were divided into two groups: those who postoperatively underwent TAPB (Group S, 20 ml. of 0.25% bupivacaine injected bilaterally); and those who did not undergo TAPB (Group C). Study exclusion criteria are as follows: use of drugs acting on cardiovascular system, congestive heart failure, diabetes mellitus, hematological disorder, chronic pain syndrome or recent use of analgesics, obesity (body mass index >30 kg/m²), contraindications for spinal anesthesia (sepsis, bacteremia, regional skin infection, hypovolemia, coagulopathy, therapeutic anti-coagulation, elevated intracranial pressure, patient's refusal), previous abdominal surgery, recurring caesarian section, placental anomalies, eclampsia, preeclampsia, and allergy to local anesthetics. TAP block was performed at the end of surgery using landmark technique. With the patient in the supine position, the iliac crest was palpated from anterior to posterior. Triangle of Petit was located (anteriorly bounded by external oblique and posteriorly by latissimus dorsi muscle and inferiorly by iliac crest). A 22 gauge 5 cm long blunt tip regional anesthesia needle was inserted in the triangle of Petit just above the iliac crest at right angle to the coronal plane until resistance was felt. This indicated that the needle tip pierced external oblique muscle. The needle was advanced gently in the same direction until "pop" sensation was felt, which signaled entry into fascial plane between external and internal oblique muscles. Further advancement resulted in 2nd "pop" and this indicated entry into TAP. After careful negative aspiration 20 ml of 0.25% bupivacaine (group S) was slowly injected. The block was given on the other side using the same method. In the control group C,

the patients did not receive the block but had their skin punctured on both sides after palpating triangle of Petit. The patients received standard analgesia according to obstetric department protocol consisting IV diclofenac 75 mg 8 hourly, first dose was given at the end of surgery. Patients' vitals, any adverse events, time to first rescue analgesic and VAS score were recorded in the ward. Visual Analog Scale (VAS) scores were recorded at the post-operative 2nd, 4th, 6th, 8th, 12th, 18th and 24th hour.

RESULTS:

There was no statistically significant difference between the groups regarding age, body weight, gestational week, and duration of surgery. Vitals were stable in both the study groups. No adverse events noted in either group. Time to first rescue analgesic (injection tramadol) was significantly longer in group S (7.5 hrs) compared to group C (3.2 hrs) ($p < 0.05$). VAS scores at the post-operative 2nd, 4th, 6th, 8th, 12th, 18th and 24th hour were lower in group S when compared to group C.

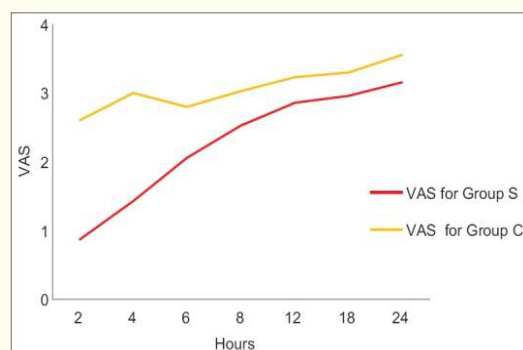


Time in hour for first rescue analgesia Vs study groups

Demographic data were comparable in both groups

Parameter	Group S	Group C	P
Age (years)	22.6±6.3	23.2±6.2	
Weight (kg)	62.5±4.2	64.4±4.5	
ASA I/II	27/3	26/4	
Heart rate (/min)	75.5±6.2	78.5±6.5	NS
Mean arterial pressure (mmHg)	101.64±7.2	103.7±7.5	NS

NS: Not significant, ASA: American Society of Anesthesiologists



CONCLUSIONS:

It has been determined that TAP block performed after spinal anesthesia results in lower VAS scores and significantly reduces rescue analgesic requirements without adding any side effects. these ultimately leads to better patient satisfaction and fasten recovery.

DISCUSSION:

Transversus abdominis plane block is among the newly described methods to provide analgesia following abdominal surgery . TAP block has been used for various abdominal procedures other than caesarean section such as large bowel resection, open/laparoscopic appendectomy, total abdominal hysterectomy, laparoscopic cholecystectomy, open prostatectomy, abdominoplasty with or without flank liposuction, inguinal hernia and iliac crest bone graft. The TAP has poor vascularity, and hence the action is prolonged and not associated with any major complications. TAP block reduces rescue analgesic doses and help in early recovery and better patient satisfaction.

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