Intrathecal block for breast augmentation surgery in Poland’s syndrome: A case report

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Abstract
Breast augmentation is an increasing popular day case procedure. Local infiltration anaesthesia with sedation is routinely used for its ease of application as compared to more complex and potentially riskier intrathecal block. We hypothesized that intrathecal isobaric ropivacaine by experienced anaesthetist was more effective than local anaesthesia with sedation, in view of adequate sensory blockade. Intrathecal Isobaric ropivacaine which is less cardiotoxic produces more sensory blockade over motor blockade as compared to intrathecal hyperbaric bupivacaine which is most popular anaesthetic drug for spinal anaesthesia. Moreover ropivacaine needs less dose and does not require head low position to achieve higher level of blockade as compared to bupivacaine since it is isobaric in nature. We present a case of unilateral breast augmentation of a woman, successfully performed by the application of intrathecal block without any complication.

Keywords: Poland’s syndrome, Breast augmentation.

Case Report

A 15 year old female patient (body weight 49 kg, height 160cm) came with chief complaint of absence of left breast since birth, was planned for breast augmentation surgery under spinal anaesthesia. The patient had no comorbid diseases and no past history of surgery. Preoperative routine laboratory analyses revealed normal complete blood count and biochemical parameters. The patient was placed on the operating room table and following 500 ml ringer lactate infusion, her heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP) and peripheral oxygen saturation (SpO2) were monitored and preoperative measures were recorded (HR 82 beats/min, SBP 117 mmHg, DBP 80 mmHg, SpO2 99%). She was administered oxygen (O2) at a rate of 4 L/min through a nasal catheter. With the patient lying on the lateral side, a 26 gauge Quincke spinal needle was used to access the subarachnoid space through L1-L2 interval with a single puncture. After free flow of the cerebrospinal fluid (CSF) was visualized, 15 mg isobaric 0.5% ropivacaine was injected in the CSF within 15 seconds. Then the patient was placed in the supine position. Vital signs were monitored. For the assessment of spinal anaesthesia, sensory block was measured with the hot-cold test and the Bromage scale was used for motor block assessment. It was observed that the sensory block at the 15th minute was at T2 level, Bromage scale 3 and surgery was started.

Intraoperative monitoring of haemodynamic and respiratory parameters revealed HR 75-84 beats/min, SBP 110-120 mmHg, DBP 71-78 mmHg and SpO2 98-99%. The patient did not develop hypotension, bradycardia and did not require ephedrine or atropine during the operation. The intervention was completed after 60 mins without any complication. After the patient left the recovery room we evaluated the patient for second time and observed that sensory block at T3 level, Bromage scale 3 and SpO2 99% at room air.

<table>
<thead>
<tr>
<th>Sensory block</th>
<th>4th hours</th>
<th>5th hours</th>
<th>6th hours</th>
<th>7th hours</th>
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<tbody>
<tr>
<td>T9-10</td>
<td>2</td>
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<td>S1-2</td>
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Motor block

<table>
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<tr>
<th>Sensory block</th>
<th>4th hours</th>
<th>5th hours</th>
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However, in the third evaluation, it was decided to carry out these evaluations more frequently or hourly. In the postoperative visit four hours after the spinal anaesthesia, the sensory block was at T9-10 level and the motor block according to the Bromage scale at grade 3. Thus, to avoid missing any neurological complications, sensory and motor block were evaluated hourly (table). Complete recovery of the sensory and motor blocks was observed at 7th hours after spinal injection of the drug. No neurological symptoms or signs such as urinary or anal incontinence, dysesthesia and lumber or leg pain developed in conjunction with prolonged sensory and motor block. The patient was discharged from the hospital at postoperative day two without any complications.

**DISCUSSION**

We observed in our case, intrathecal isobaric Ropivacaine (0.5%) produced more and longer duration of sensory block as compare to shorter duration of motor block. This finding is consistent with the report by Singh et al.\(^1\) the duration of motor block was significantly \((p < 0.01)\) in ropivacaine group \((112.5\pm45)\) as compare to bupivacaine group \((165\pm26)\) there is a greater degree of sensory motor separation with ropivacaine as compare to bupivacaine, also reported by McClellan et al.\(^2\) ropivacaine being a pure S- enantiomer has low lipid solubility and blocks nerve fibres involved in pain transmission to a greater degree than those involve in motor function. Throughout the perioperative period patient was hemodynamically stable without any need of vasoactive and sympathomimetic drugs which supports the report by Mantouvalou et al.\(^3\) Bupivacaine required more often the use of a vasoactive drug (ephedrine) compared to both ropivacaine and levobupivacain and of a sympathomimetic drugs (atropine) compared to the Ropivacaine group. There is no respiratory disturbances in perioperative and postoperative period along with no other complication like anal or urinary incontinence and early recovery from motor blockade also, reported by
Lirk et al.\textsuperscript{4} shorter motor block would mean early recovery from respiratory disturbance caused by spinal anaesthesia and shorter time to first micturation and early recovery.

**CONCLUSION**

With intrathecal isobaric Ropivacaine (0.5%) we can perform surgery (example: breast augmentation surgery), which requires higher level of sensory block without any significant hemodynamic changes or complications like respiratory disturbances with advantage of early ambulation.

**REFERENCES**