

## Common Complaints Associated with Caesarean Section during Spinal Anaesthesia

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### Abstract

**Objective:** To identify common complaints associated with caesarean section under spinal anaesthesia and manage them, in order to decrease the anxiety and distress level of the patients.

**Methods:** Cross sectional observational study was conducted at Department of Anaesthesia, Liaquat National Hospital and Medical College from October 2011 to December 2012. Hundred patients aged from 20-36 years underwent elective caesarean section under spinal anaesthesia. Patients received nothing per oral for 6 hours. Metoclopramide and Ranitidine IV were given half hour before surgery. Colloid 10ml/kg was given IV before induction of spinal anaesthesia. All patients were placed in sitting position and under aseptic conditions lumbar puncture was done at L3-L4 or L4-L5 interspaces with 25 gauge pencil point needle to administer local anaesthetic over 20 seconds slowly. Oxygen 4 liters/minute was administered via a Hudson mask. All the patients were asked for any complaint during caesarean section under spinal anaesthesia. More than five common complaints were considered and similar complaints which are less than five were not included in the study.

**Results:** Out of 100 patients, 67% patients had no complaints and 33% patients presented common complaints. Visceral pain or abdominal discomfort was 19%, shivering 11%, nausea and vomiting 10%, epigastric pain 6%, backache 5% and headache 5%.

**Conclusion:** Spinal anaesthesia is an excellent technique for caesarean section in majority of patients. Patients have various complaints during spinal anaesthesia which may increase anxiety and distress levels in patients.

**Keywords:** Caesarean section, spinal anaesthesia, common complaints, caesarean section. (AASH & KMDC 18(1):1;2013)

### Introduction

Over 20% of deliveries require a caesarean section for the birth of the baby<sup>1</sup>. Caesarean deliveries are performed as an elective or an emergency procedure under General, Spinal, Epidural or combined spinal epidural anaesthesia. The majority of caesarean sections are done under spinal anaesthesia now. Spinal Anaesthesia is preferred for caesarean section because it is simple to perform and is economical. It produces rapid onset of anaesthesia, patients remain awake and alert, associated with less nausea and vomiting, minimal neonatal depression, less incidence of aspiration pneumonitis and adequate muscle relaxation. Spinal anaesthesia produces a fixed duration of anaesthesia and some associated complications include hypotension, shivering, visceral pain or discomfort, nausea, vomiting, and headache during or after the

procedure<sup>2</sup>. Sometimes spinal anaesthesia is converted into general anaesthesia. Major maternal complaints during caesarean section under spinal anaesthesia were visceral pain or discomfort. Visceral pain, nausea, vomiting, shivering and other complaints become very severe, therefore sometimes may require general anaesthesia if the patients discomfort cannot be controlled. The conversion rate from spinal to general anaesthesia is 0.7-2.8%<sup>3,4</sup> and even higher in emergency caesarean section that is 4.9%<sup>5</sup>. Visceral pain is dull, poorly localized and the visceral sensation is described as heaviness squeezing or unpleasant feeling associated with nausea and vomiting<sup>6</sup>. Sometimes it is associated with exteriorization of the uterus<sup>7</sup>. Intra operative nausea and vomiting is uncomfortable to the patients and may cause protrusion of abdominal viscera rendering surgery more difficult and increasing the risk of visceral injury<sup>8</sup>. Patient feels a lot of anxiety and distress during spinal anaesthesia. Anxiety and distress level of an-

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aesthetist is also very high during spinal anaesthesia due to various complaints of the patients. The purpose of this study was to identify the common complaints associated with caesarean section under spinal anaesthesia and manage them, in order to decrease the anxiety and distress level of the patients.

## Patients and Methods

This cross-sectional observational study was conducted at Department of Anaesthesia, Liaquat National Hospital and Medical College from October 2011 to December 2012. Convenience sampling was done and 100 patients were included. All the patients belonged to American Society of Anesthesiology (ASA) grade I and II, aged from 20 to 36 years under going elective caesarean section under spinal anaesthesia (Table I). Patients were asked for the type of anaesthesia preoperatively. Thirty six patients agreed for general anaesthesia, 40 patients for spinal anaesthesia and 24 patients left the decision on attending anaesthetist. Thirty six patients who initially agreed for general anaesthesia, were explained the advantages of spinal anaesthesia over general anaesthesia. After knowing the benefits of spinal anaesthesia they agreed for spinal anaesthesia. Exclusion criteria was refusal for spinal anaesthesia, pregnancy induced hypertension, known foetal abnormality, allergy to bupivacaine, bleeding disorder and infection at the site of injection. Each patient had fasting for six hours and Metoclopramide and Ranitidine IV were administered half hour before surgery. Heart rate, blood pressure and oxygen saturation were recorded. Intravenous line was maintained. Colloid 10ml/kg was given IV before induction of spinal anaesthesia. Each patient was placed in sitting position and under aseptic conditions lumbar puncture was done at L3-L4 or L4-L5 inter vertebral spaces with 25 gauge pencil point needle (sprotte) and local anaesthetic Bupivacaine 0.75% was administered over 20 seconds. The dose of Bupivacaine was adjusted according to the height of the patient that is 1.6 ml for women <150 centimeters and 1.8 ml for women >150 centimeters<sup>9</sup>. After spinal anaesthesia, the pa-

tients were turned to supine position with lateral tilt immediately to avoid aorto caval compression. The spread of analgesia was assessed by pinprick after spinal anaesthesia while motor block was assessed by using the Bromage scale. Oxygen 4 liters / minute was administered via a Hudson mask. Pulse rate, Blood pressure and oxygen saturation were recorded after an interval of 2 minutes for the first 15 minutes and then at 5 minutes interval throughout the surgery. Hypotension, defined as decrease in systolic pressure less than 90 mmHg or decrease of blood pressure 20% from base line, was treated with boluses of IV Ephedrine. Intra-operative pain was treated with IV Nalbuphine 5-10mg, Midazolam 2-5mg and Ketamine 25-50mg. Nausea or vomiting with IV Metoclopramide 10mg after excluding intra operative hypotension. Intra operative shivering was treated by Tramadol 25-50mg and epigastric pain with IV Ranitidine 50mg. Headache was managed by reassurance and Midazolam (Table II). Intensity of pain was assessed by numerical pain rating scale; 1-3 for mild pain 4-6 for moderate pain and 7-10 for severe pain. The intensity of intra operative shivering was graded as mild with no visible muscle activity, moderate with more than one muscle group and no generalized shaking and severe with violent muscle activity that involves the whole body. All the patients were asked for any complaint during caesarean section under spinal anaesthesia. Similar complaints which were similar and more than 5 in numbers were considered as common complaints. Complaints less than 5 in numbers were not included in this study. Statistical analyses was performed by using Statistical package for social sciences (SPSS) version14; quantitative variables were expressed as mean  $\pm$  SD (standard deviation) while qualitative variables were expressed as percentage.

**Table 1.** Level of spinal space at which Bupivacaine was given and the dermatome level achieved in patients (n=100) with spinal anaesthesia

Characteristics	Number of patients n(%)	
ASA classification	1	88(88)
	11	12(12)
Spinal space	L3-4	78(78)
	L4-5	22(22)
Dose Bupivacaine (ml)	1.6	21(21)
	1.8	79(79)
Height achieved (dermatome level)	T4	81(81)
	T6	19(19)

**Table 2.** Treatment given to patients with common complaints during spinal anaesthesia

Drugs	Number of patients n(%)
Ephedrine	6(6)
Midazolam & Nalbuphine	6(6)
Ranitidine	5(5)
Nalbuphine	5(5)
Midazolam, Nalbuphine & Ketamine	4(4)
Tramadol	3(3)
Metoclopramide	2(2)
Midazolam, Nalbuphine & Tramadol	1(1)
Nalbuphine & Ephedrine	1(1)

**Table 3.** Common complaints of patients (n=100) during caesarean section with spinal anaesthesia

Common complaint	Number of patients (n=100)	Frequency n (%)
Visceral pain or abdominal discomfort n=19	Mild pain	7(7)
	Moderate pain	8(8)
	Severe pain	4(4)
Epigastric pain n=6	Mild pain	4(4)
	Moderate pain	2(2)
	Severe pain	0(0)
Nausea & vomiting n=10	Nausea	7(7)
	Vomiting	3(3)
Shivering n=11	Mild	7(7)
	Moderate	4(4)
Backache n=5	Backache	5(5)
Headache n=5	Headache	5(5)

## Results

Number of patients included in this study was 100. The mean age of the patients was  $27.09 \pm 5.8$  years and duration of caesarean section was  $53.79 \pm 5.8$  minutes. None of the patients had any complaint during caesarean section under spinal anaesthesia before delivery of fetus. Patients who had no complaint were 67% whereas 33% patients had

complaints during spinal anaesthesia. There was a high incidence of complaints found in patients convinced for spinal anaesthesia. Out of 33% patients 20% were those who were convinced for spinal anaesthesia. Visceral pain or abdominal discomfort was present in 19%, Shivering was present in 11%, Nausea and vomiting was experienced by 10%, epigastric pain in 6% of the patients. Patients complaining of backache were 5% and headache was present in 5% (Table 3).

## Discussion

Recent trends of obstetric anaesthesia show increased popularity of regional anaesthesia. General anaesthesia is associated with high mortality rates as compared to regional anaesthesia. Local anaesthetic agent, 'Bupivacaine' is common for spinal anaesthesia combined with narcotics to produce adequate depth of anaesthesia. Visceral pain is a common problem in caesarian section under spinal anaesthesia. The visceral pain is dull poorly localized unpleasant feeling often accompanied by nausea and vomiting, exteriorization of uterus after delivery and manipulation of abdominal viscera. Our results showed high incidence of visceral pain that was 19%. Three patients out of 19 felt abdominal discomfort even when abdomen was closed and pressure just applied on the stitched wound. Bogra et al.<sup>2</sup> found no visceral pain in high doses of Bupivacaine, however, visceral pain was not fully abolished with low doses of Bupivacaine. Choi et al.<sup>10</sup> showed high incidence of visceral pain that was 35% with low dose and 20% with high dose Bupivacaine. Pedersen et al reported visceral pain in 31.6%<sup>11</sup> which is high as compared to our study. Nausea and vomiting are troublesome side effects encountered during spinal anaesthesia for caesarian section. Possible etiology includes hypotension and peritoneal manipulation. The abrupt diaphragmatic contraction present in emesis was uncomfortable to the patients and might cause protrusion of abdominal viscera rendering surgery more difficult. Incidence of nausea and vomiting in our study was 10% and 8 patients developed nausea and vomiting probably due to hypotension. They did not complain for nau-

sea and vomiting once their blood pressure came to base line level. The remaining two developed nausea and vomiting in the absence of hypotension. Shahriri et al.<sup>12</sup> showed that intraoperative frequency of nausea vomiting treated with Midazolam was 15% and with Metoclopramide was 52% under spinal anaesthesia. This is very high as compared to our study. Carpenter et al.<sup>13</sup> found incidence of nausea in 18% and vomiting in 7% of patients under spinal anaesthesia. Incidence of nausea vomiting is low about 8.4%, when patients were treated with Metoclopramide and Ondansetron prophylactically which is almost same as in our study.

Shivering associated with spinal anaesthesia is common. Shivering is uncomfortable for the patients, may interfere with monitoring of ECG, B.P monitoring and oxygen saturation. It increases oxygen consumption lactic acidosis and carbon dioxide production. Incidence of shivering in our study was 11%. Talakaub et al.<sup>14</sup> have reported an incidence of 40%-50%. Shukla et al.<sup>15</sup> evaluated that disappearance of shivering was earlier with Clonidine as compared to Tramadol under spinal anaesthesia. Hong et al.<sup>16</sup> showed the incidence of shivering after spinal anaesthesia with bupivacaine was 23.3% which decreased to 13.3% when Bupivacaine was combined with narcotics. Mohta et al.<sup>17</sup> used Tramadol in three doses, all three doses of Tramadol were effective in preventing post anaesthesia shivering. Abdelrahman et al.<sup>18</sup> used Midazolam, Midazolam plus Ketamine, Tramadol, Tramadol plus Ketamine during regional anaesthesia the incidence of shivering ranged from 15-55%. The incidence reported in this study is very high as compared to our study. Honarmand et al.<sup>19</sup> showed prophylactic use of Ketamine plus Midazolam was more effective than Ketamine or Midazolam in preventing shivering developed during regional anaesthesia. Incidence of epigastric pain was 6%. All responded well to 1V Ranitidine. Intraoperative headache was 5%. No obvious reason was found for headache, 4 patients after spinal anaesthesia became hypotensive and were given IV ephedrine after which their blood pressure was higher than their base line BP, which could be the cause of headache. Backache was

found in 5% of the patients probably due to prolonged operating time which lasted for more than 65 minutes.

### Conclusion

Spinal anaesthesia is an excellent technique for caesarean section. Patients have various complaints during spinal anaesthesia which may increase anxiety and distress level in patients. Patients convinced for spinal anaesthesia had more complaints as compared to those who were willing for spinal anaesthesia. Those patients who are reluctant for spinal anaesthesia should be considered for general anaesthesia.

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