

International Journal of Research in Health and Allied Sciences

Journal home page: www.ijrhas.com

Official Publication of "Society for Scientific Research and Studies" [Regd.]

ISSN: 2455-7803

ORIGINAL RESEARCH

Assessment of patients undergoing cesarean section under spinal anesthesia

Piyush Vohra¹, Sanjeev Chauhan²

¹Specialist Medical Officer, Obstetrician and gynaecologist, Regional Hospital, Una, Himachal Pradesh- India

²Medical officer, Ophthalmology, Civil hospital Sarkaghat, Distt Mandi, Himachal Pradesh- India

ABSTRACT:

Background: Cesarean anesthesia has gained importance as the cesarean birth rates have increased. The present study was conducted to assess patients undergoing cesarean section under spinal anesthesia. **Materials & Methods:** 106 cesarean sections performed in gynaecology department were included. Patients' parameters such as heart rate, systolic blood pressure, diastolic blood pressure and respiratory rates were assessed regularly. Intraoperative complications were assessed and recorded. **Results:** Age group 18- 24 years had 42 patients, 24-28 years had 34 and 28- 34 years had 30 patients. The mean age was 28.2 years, VAS core was 5.11 and pain score was 10.3. Most common complication was shivering seen in 36, anesthetic failure in 28, Post-dural puncture headache (PDPH) in 20, hypotension in 17, nausea/vomiting in 12, high spinal block in 14, backache in 6 and loss of consciousness in 3. The difference was significant ($P < 0.05$). **Conclusion:** Most common complications of spinal anesthesia found to be shivering and anesthetic failure.

Key words: Anesthetic failure, Shivering, C section

Received: 12 October, 2020

Accepted: 21 October, 2020

Corresponding author: Dr. Sanjeev Chauhan, Medical officer, Ophthalmology, Civil hospital Sarkaghat, Distt Mandi, Himachal Pradesh- India

This article may be cited as: Vohra P, Chauhan S. Assessment of patients undergoing cesarean section under spinal anesthesia. Int J Res Health Allied Sci 2020; 6(6): 82-84.

INTRODUCTION

The frequency of cesarean section births continues to steadily rise worldwide. Even though the cesarean procedure has become very safe over the years, it is still associated with high rates of maternal and perinatal mortality and morbidity. The overall postoperative morbidity rate associated with cesarean births is 35.7%.¹ The higher mortality and morbidity rates might be attributable not only to the surgical procedure but also to the anesthetic technique preferred. Cesarean anesthesia has gained importance as the cesarean birth rates have increased.² For many years, general anesthesia was the preferred type for use in cesarean procedures. Although it has many advantages, such as faster induction, better cardiovascular stability with lower incidence of hypotension, and good control over ventilation, use of anesthetic drugs that cross the placental barrier can nevertheless produce neonatal depression.³ Studies have reported that around 40.9% of the childbirths are taking place through Cesarean section (C- section) at private hospitals and around 11.9% are

taking place in the government funded hospitals. In this regard, several studies have shown the drawbacks of C-section delivery related epidural or spinal anesthesia. Women, who undergo this type of anaesthesia, are more prone to experience back pain in later life. However, some evidences have contradicted this idea.⁴

General anaesthesia may lead to loss of airway control, with anoxia and aspiration of gastric contents. This risk associated with obstetric general anaesthesia has led to regional techniques being used wherever possible. General anaesthesia is now used mainly for true emergency cases where there is insufficient time for a regional technique. However; general anaesthesia has the advantage of rapid induction, less hypotension, cardiovascular stability and better control over airways and ventilation.⁵ The present study was conducted to assess patients undergoing cesarean section under spinal anesthesia.

MATERIALS & METHODS

The present study was conducted among 106 cesarean sections performed in gynaecology department. The exclusion criterias were presence of relative or absolute contraindication for regional anesthesia, patient refusal to participate into the study, first cesarean section earlier than 5 years. Patients were informed regarding the study and written consent was obtained. The study protocol was approved from institutional ethical committee.

Data such as name, age etc. was recorded. Patients' parameters such as heart rate, systolic blood pressure, diastolic blood pressure and respiratory rates were assessed regularly. Intraoperative complications were assessed and recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age group (Years)	Number	P value
18-24	42	0.15
24-28	34	
28-34	30	

Table I shows that age group 18- 24 years had 42 patients, 24-28 years had 34 and 28- 34 years had 30 patients. The difference was non- significant ($P > 0.05$). Table II shows that mean age was 28.2 years, VAS core was 5.11 and pain score was 10.3. Table II shows that most common complication was shivering seen in 36, anesthetic failure in 28, Post-dural puncture headache (PDPH) in 20, hypotension in 17, nausea/vomiting in 12, high spinal block in 14, backache in 6 and loss of consciousness in 3. The difference was significant ($P < 0.05$).

Table II Assessment of parameters in patients

Parameters	Mean	P value
Mean age (Years)	28.2	-
VAS score	5.11	0.01
Pain score	10.3	

Table II Complications of spinal anesthesia

Complications	Number	P value
Nausea/ Vomiting	12	0.021
Backache	6	
Shivering	36	
High spinal block	14	
Post-dural puncture headache (PDPH)	20	
Loss of consciousness	3	
Hypotension	17	
Anesthetic failure	28	

DISCUSSION

Anesthetic techniques currently available for caesarean delivery are general and regional anesthesia. Spinal anesthesia for caesarean section is advantageous due to simplicity of technique, rapid administration and onset of anesthesia, reduced risk of

systemic toxicity and increased density of spinal anesthetic block.⁶ Both spinal and epidural techniques are shown to provide effective anesthesia for caesarean section. Spinal anesthesia has a shorter onset time, but treatment for hypotension is more likely if spinal anesthesia is used.⁷

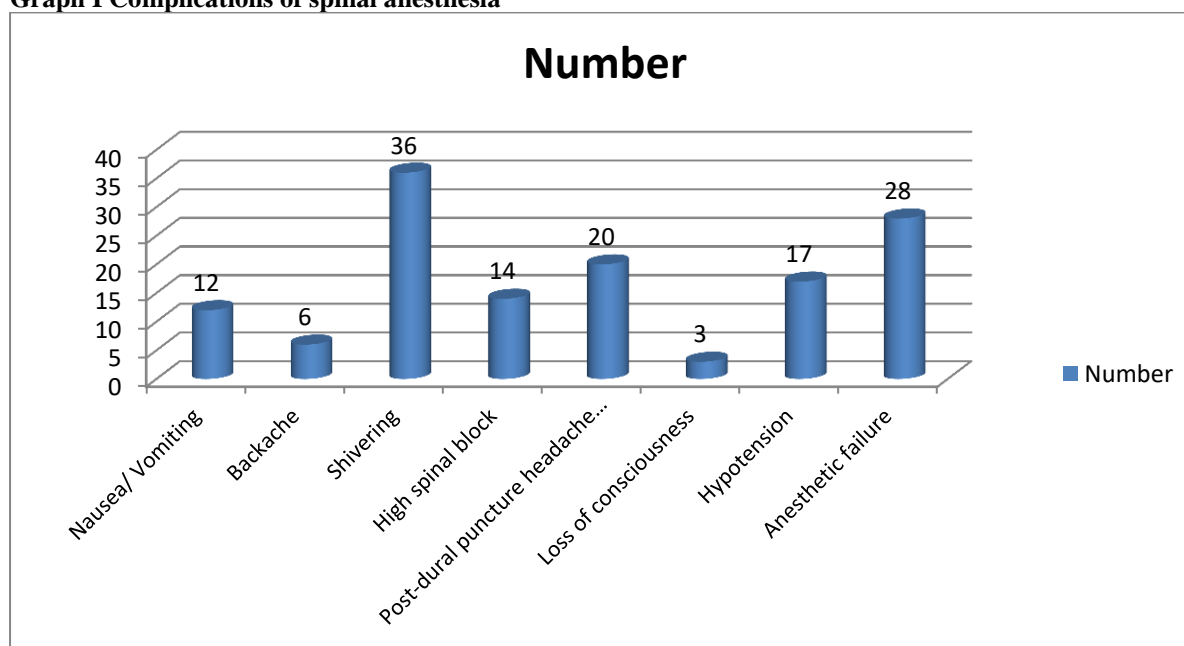
The rates of cesarean section using regional anesthesia have been increasing and regional anesthesia has now become the preferred anesthetic technique for avoiding both maternal and fetal complications. Although many reports have shown that regional anesthesia and general anesthesia have almost identical indexes of neonatal wellbeing, a growing number of anesthesiologists prefers regional anesthesia under elective conditions.⁸ Regional anesthesia-related hypotension due to sympathetic blockade may affect neonatal short-term outcomes by impairing uteroplacental perfusion.

Additionally, cerebrospinal fluid (CSF) leakage following lumbar puncture may induce headache, nausea and vomiting. On rare occasions, insufficiency of the regional blockade and consequent conversion to general anesthesia has been reported.⁹ The present study was conducted to assess patients undergoing cesarean section under spinal anesthesia.

In present study, age group 18- 24 years had 42 patients, 24-28 years had 34 and 28- 34 years had 30 patients. Saygi et al¹⁰ conducted a study on 100 patients who underwent cesarean section due to elective indications. The patients were randomly divided into general anesthesia (n = 50) and spinal anesthesia (n = 50) groups. The maternal pre and postoperative hematological results, intra and postoperative hemodynamic parameters and perinatal results were compared between the groups. Mean bowel sounds ($P = 0.036$) and gas discharge time ($P = 0.049$) were significantly greater and 24th hour hemoglobin difference values ($P = 0.001$) were higher in the general anesthesia group. The mean hematocrit and hemoglobin values at the 24th hour ($P = 0.004$ and $P < 0.001$, respectively), urine volume at the first postoperative hour ($P < 0.001$) and median Apgar score at the first minute ($P < 0.0005$) were significantly higher, and the time that elapsed until the first requirement for analgesia was significantly longer ($P = 0.042$), in the spinal anesthesia group.

We found that mean age was 28.2 years, VAS core was 5.11 and pain score was 10.3. Mukhopadhyay et al¹¹ in their study 48 housewives are included in this study (20 subjects for vaginal delivery and 28 subjects for spinal anaesthesia induced cesarean section) based on convenient sampling method through assessing their socio-economic status and other attributing criteria. Pain detect tool was used to track back pain status and a semi structure questionnaire was used to explore other considerations. Results have shown significant differences in pain responses after receiving spinal anesthesia (exposed group) than control group. Subjects have reflected significant differences in their pain perception scores.

Graph I Complications of spinal anesthesia



Spinal anaesthesia in obstetrics differs from spinal anaesthesia in non-pregnant patients in several ways. Smaller doses of local anaesthetic are needed for spinal anaesthesia in pregnancy, and the spread in cerebrospinal fluid (CSF) is less predictable. Hypotension, spinal headache and spinal opioid side effects are more common in pregnant patients than general surgical patients. The fetus may be affected adversely by maternal hypotension or inappropriate vasopressors. Technical difficulty in finding the subarachnoid space may be greater in pregnancy because of the increased lumbar lordosis.¹²

CONCLUSION

Authors found that most common complications of spinal anesthesia found to be shivering and anesthetic failure.

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