

ORIGINAL ARTICLE

THE COMPLICATIONS OF SPINAL ANESTHESIA IN OBSTETRIC AND GYNECOLOGICAL SURGICAL PROCEDURES

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ABSTRACT

Background: The proper use of spinal anesthesia in surgical procedures will minimize patient's referral. The objectives of the study were to determine the immediate and late complications of spinal anesthesia in obstetric and gynecological surgical procedures in our population.

Material and Methods: This cross-sectional study was conducted in the Department of Gynecology and Obstetrics, Moulvi Ameer Shah Memorial Hospital, Peshawar, Pakistan from January 2014 to December 2014. Sample size was 790, selected through consecutive sampling technique. All routine and emergency obstetrical and gynecological cases were included. The exclusion criteria were those having hypotension, shock, coagulopathy, prolonged surgeries, patient's refusal and local spinal disease. The demographic variables were; number of attempts, failure of anesthesia, vomiting, hypotension, respiratory problems, pain, Puncture site pain, and post dural puncture headache. All variables being categorical were analyzed by frequency and percentages using SPSS Version 16.0.

Results: Out of 790 obstetrics and gynecology patients undergoing spinal anesthesia, there were 752 (95.2%) patients anaesthetized on first attempt whereas 38 (4.8%) required >1 attempts. Spinal anesthesia failed in 17 (2.1%) cases, partially failed in 15 (1.9%). Post-operative mild hypotension was observed in 25 (3.1%) patients and severe hypotension in 4 (0.5%) cases. Respiratory problems were noted among 12 (1.9%). Patient's Post-operative pain was observed in 28 (3.5%) patients. Nausea and vomiting were noted in 68 patients (8.6%). Late complications include post-operative mild to moderate pain in 65 (8.2%), severe in 15 (1.9%). Puncture site pain was observed in 8 (1.0%) of patients. Severe post dural puncture headache was noted in 3 (.38%).

Conclusion: Spinal anesthesia in obstetric and gynecological surgical patients is easy to administer, safer and effective.

KEY WORDS: Spinal Anesthesia; Hypotension; Subdural puncture; Headache.

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INTRODUCTION

After its introduction in 1898, spinal anesthesia quickly gained popularity and despite undergoing highs and lows of time, became a favored anesthesia technique for caesarean section worldwide. On one hand when there are reports of inexplicable complete failure of intrathecal anesthesia for caesarean

deliveries,¹ there are studies in its favor also. Recent randomized controlled trials describe benefits of earlier intravenous canulae removal, ambulation, breast feeding initiation and potential for shorter hospitalization, after caesarean delivery under spinal anesthesia.² In Pakistan spinal anesthesia remains popular amongst the anesthetist owing to its cost effectiveness.³

The advantages of regional anesthesia are recognized not only by anesthesiologists but also by obstetricians. In the 1992 committee opinion publication, anesthesia for emergency deliveries, the risks of failed intubation and aspiration pneumonitis were recognized as serious complications of general anesthesia.⁴ The maternal mortality and morbidity

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were significantly reduced by using neuro-axial blocks in obstetric anesthesia.⁵ Spinal anesthesia is inexpensive and appropriate for virtually all cases except those with unresuscitated pre-operative hypovolemic and those with specific contraindications; bleeding disorders, lumbar puncture site sepsis, raised intracranial pressure etc.).⁶ The benefits of the spinal anesthesia are also studied. It is cost effective as compared to general anesthesia. It is safe due to not involvement of respiratory tract, brain and heart directly. There is no risk of aspiration. There is need of less staff for post-operative care as patient is awake can feed her neonate. General anesthesia in caesarean section is associated with an increased risk of maternal mortality.⁸ It is therefore a popular practice to use regional anesthesia wherever possible.⁹ It is simple to institute, rapid in its effect and produces excellent operating conditions.⁷ The objectives of the study were to determine the immediate and late complications of spinal anesthesia in obstetric and gynecological surgical procedures in our population.

MATERIALS AND METHODS

This cross sectional study was conducted in the Department of Gynecology and Obstetrics, Moulvi Ameer Shah Memorial Hospital, Peshawar, Pakistan from January 2014 to December 2014. Sample size was 790, selected through consecutive sampling technique. All routine and emergency obstetrical and gynecological cases were included. The exclusion criteria were those having hypotension, shock, coagulopathy, prolonged surgeries, patient's refusal and local spinal disease. Informed consent was taken from all patients. The demographic variables were; number of attempts (single >1), failure of anesthesia (completely failed, partially failed, successful), vomiting (yes, no), hypotension (mild, severe, nil), respiratory problems (Yes, No), pain (Yes, No),

Puncture site pain (yes, no), and post dural puncture headache (yes, no). Each patient was kept 6-8 hours fasting. Preload was done with 1000mls of ringer/lactate solution. Local infiltration was done at L4_5 intervertebral space using 1% lignocaine. Lumbar puncture was done using 25 gauge spinal needles in a sitting position. 1.5 mls of .75% hyperbaric bupivacaine was injected intrathecal after free flow of CSF was confirmed. The patient was immediately placed supine with 20% left tilt position. After effective block the surgery was started. Any discomfort during surgery was treated with sedo_ analgesia. Using injection tramal or ketamine 20mg. All the patients were shifted to the post-operative ward on injection diclofenic sodium or tramal 8 hourly i/m. During the hospital stay the patients were observed for the post-operative complications, pain, post dural puncture headache and other problems. All variables being categorical were analyzed by frequency and percentages using SPSS Version 16.0.

RESULTS

Out of 790 obstetrics and gynecology patients undergoing spinal anesthesia, there were 752 (95.2%) patients anaesthetized on first attempt whereas 38 (4.8%) required >1 attempts. Spinal anesthesia failed in 17 (2.1%) cases, partially failed in 15 (1.9%). Post-operative mild hypotension was observed in 25 (3.1%) patients and severe hypotension in 4 (0.5%) cases. Respiratory problems were noted among 12 (1.9%). Patient's Post-operative pain was observed in 28 (3.5%) patients. Nausea and vomiting were noted in 68 patients (8.6%). Table 1

Late complications include post-operative mild to moderate pain in 65 (8.2%), severe in 15 (1.9%). Puncture site pain was observed in 8 (1.0%) of patients. Severe post dural puncture headache was noted in 3 (.38%). Table 2

Table 1: Early complications of spinal anesthesia in obstetric and gynecological surgical patients in Peshawar, Pakistan (n =790)

S.No.	Early complications	Frequency with Percentages	
1.	Number of attempts	Single	Multiple
		752 (95%)	38 (5%)
2.	Failure	Complete	Partial
		17 (2.1%)	15 (1.9%)
3.	Hypotension	Mild	Severe
		25 (3.1%)	4 (0.9%)
4.	Respiratory problems	Yes	No
		12 (2%)	778 (98%)
5.	Pain	Yes	No
		28 (4%)	762 (96%)

Table 2: Late complications of spinal anesthesia in obstetric and gynecological surgical patients in Peshawar, Pakistan (n =790)

S.No.	Late complications	Yes	No
6.	Pain	80 (10%)	710 (90%)
7.	Severe post dural puncture headache	3 (0.4%)	787 (99.6%)
8.	Puncture site pain	20 (3%)	770 (97%)
9.	Nausea / vomiting	80 (10%)	710 (90%)

DISCUSSION

A lot of studies have been carried out in the recent past auditing satisfaction amongst indoor as well as outdoor patients.⁹⁻¹² Attempts in getting patients satisfaction level with anesthetic care has given varied results. A higher rate of dissatisfaction was found in women than men and in spinal anesthesia than in general anesthesia.¹³ The authors found that the most common dis-satisfactory factor in anesthesia care was the use of spinal anesthesia followed by epidural anesthesia, post- operative pain, vomiting/ nausea and memory of tracheal intubation. Studies conducted to find out patients dissatisfaction after spinal anesthesia implicate factors like the number of attempts of spinal block, inadequate analgesia and postoperative urinary retention.¹⁴

Regional anesthesia now-a-days has gained world-wide acceptance and its physiological effects provide a rational for expecting a better outcome with this technique.¹⁵ It is preferred as it allows mother to be aware and interact immediately after the birth of baby.¹⁶ In our study only two (0.25%) patients refused as compared to 36.59% in the study conducted by Rashad Sand S.A Jafri.¹⁸ Post-operative pain was observed in 3.5% as compared to other studies (10.8%).¹⁸ Failed spinal anesthesia in 2(0.25%) in our study requiring intubation (4.9% in other study).¹⁸ In our study only 7(0.89%) refused spinal anesthesia in future as compared to 36.34% in other study.¹⁸ Nausea and vomiting during regional anesthesia for caesarean section is relatively high without prophylactic antiemetic.^{19,20} Nausea and vomiting was high 52% in our study as compared to other studies.²¹ Post-operative Dural puncture headache was noted in 0.38% of cases as compared to 1.1% to 40% in other studies.²³⁻²⁶ This approach will help to minimize patients' referral to the tertiary care centers, making a standard protocol to enhance the utilization of resources in the district hospitals.

CONCLUSION

Spinal anesthesia in obstetric and gynecological surgical patients is easy to administer, safer and effective.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	DK, TS
Acquisition, Analysis or Interpretation of Data:	DK, TS, FA
Manuscript Writing & Approval:	DK, TS, FA

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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