

Original Research Article

EVALUATION OF POSTDURAL PUNCTURE BACKACHE IN CASES OF LSCS UNDER SUBARACHNOID BLOCK GIVEN BY RESIDENT DOCTORS

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Abstract

Background & Methods: The aim of the study is to evaluate of postdural puncture backache in cases of lscs under subarachnoid block given by resident doctors. Successful identification of the subarachnoid space with one skin puncture and no redirection of the spinal needle was considered as first pass success. The subarachnoid block was given by resident doctor.

Results: The mean duration of backache was 2 ± 1.5 days. All patients responded to treatment with paracetamol and diclofenac. Factors affecting the incidence of PDPB. The factors did not affect the incidence of PDPB: age ($P = 0.606$), elective or emergency LSCS ($P = 0.324$) or parturient in labour ($P = 0.709$), previous spinal anaesthesia ($P = 0.389$), body habitus ($P = 0.125$), bony deformity ($P = 0.875$), occurrence of paraesthesia ($P = 1.000$), contact of spinal needle with bone ($P = 0.078$), duration of surgery ($P = 0.058$), time to sitting ($P = 0.346$) and time to ambulation ($P = 0.748$), occurrence of PDPH ($P = 0.628$).

Conclusion: The incidence of PDPB was 10% in patients undergoing LSCS under subarachnoid block given by resident doctor. The onset of backache was within 24 hour of spinal anaesthesia and the pain was mild to mod intensity and responded to treatment with paracetamol and diclofenac. Factors associated with PDPB included increased weight, poor quality of spinal landmarks, increased number of attempts and spinal needle redirections and occurrence of bloody tap. Association was also noted between PDPB and provider experience.

It was noted that the patients who are complaining of backache after subarachnoid block mostly primigravida, unco-operative or obese patients due to poor positioning during SAB given by resident doctors. This resulted in multiple skin punctures, spinal needle redirections, needle passes, first pass failure, change in intervertebral space level, more than 2 attempt by resident doctor, bloody CSF tap taking over by a second provider and the SAB was given by second provider.

Keywords: postdural, puncture, backache, lscs & subarachnoid.

Study Design: Observational Study.

1. Introduction

Back pain is a very common and burdening health issue among the population of India. In other words, it can be called as a disorder that includes multiple etiologies. Various risk factors like stress, anxiety, depression, higher BMI, low bone mineral density were shown to be the attributing factors for persisting back pain[1]. Occupational risk factors like manual handling of materials beyond recommended weight limit and lifting index, high duration of physical work, inappropriate postures, bending and twisting beyond the acceptable range can have an impact in the pathogenesis of back pain. Similarly, previous history of traumatic injury at the back can also aid in the pain perception[2-4].

Postdural puncture backache (PDPB) is a common though neglected complaint following subarachnoid block which regress spontaneously but sometimes become very troublesome for the patient as well as for the anaesthesiologists. Expertise in placing SAB is essential for pain-free satisfaction in the recuperating patient[5].

Research shows that 80% of adults experience a minimum of one episode of back pain throughout their lives. In 2018, 31.6% of women aged ≥ 18 years had lower back pain. Low back pain usually involves muscle spasm of the supportive muscles along with the spine. Back pain is one of the most common problems during the postpartum period.

Analyzing the reasons, spinal anesthesia can be one of the reasons for low back pain due to the type of needle used and the duration of the surgery. The main purpose of this study was to determine the prevalence of back pain among postnatal mothers who underwent caesarean section[6]. The findings of this study can be the basis for formulating policy regarding the prevention and treatment of LBP in a large part of the global population[7].

Aim: To evaluate the incidence of postdural puncture backache after subarachnoid block given by resident doctors.

2. Material and Methods

Subarachnoid block was performed with 2–2.2 ml of heavy bupivacaine 0.5% with patient in sitting position, midline approach at the L3–L4 inter-vertebral space using 25G Quinckes needle. Successful identification of the subarachnoid space with one skin puncture and no redirection of the spinal needle was considered as first pass success. The subarachnoid block was given by resident doctor. The number of attempts (skin punctures, needle passes and needle redirections) for successful dural puncture and provider experience was noted.

PDPB was defined as continuous pain and tenderness over the lumbar area around the spinal needle insertion without any radiation.

Patient is assessed for PDPB at 12hr of surgery, then on day 1, day 2 and day 3. The presence, onset, severity and duration of backache were recorded.

Severity of PDPB was assessed by visual analogue scale (VAS 1-10) score; 0 = no backache, 1–3 = mild backache, 4–7 = moderate backache, >7 = severe backache. Factors associated with PDPB were analysed.

Sample Size - 60

Study Centre - GMC and Sultania zanana hospital, Bhopal

Inclusion criteria - 60 term parturients undergoing elective or emergency LSCS under subarachnoid block.

Exclusion criteria - Severe pregnancy-induced hypertension (PIH) and eclampsia, haemodynamic instability, raised intracranial pressure, coagulopathy, any contraindication to subarachnoid block. Patients with previous history of backache were also excluded.

Statistical analysis was performed by the Statistical Package for the Epi info program. A P value < 0.05 was taken to indicate significant difference.

3. Result

Table No. 1: Patient characteristics, body habitus and quality of landmarks

Parameters	N=60
Age (yr)	25.3±4.3
Weight(kg)	9±2
Elective/Emergency	10/50
Patient in labour (Uncooperative)	36
Duration of surgery	57.5±7.2
Body habitus	
Normal	34
Thin	12
Obese	9
Overweight	5
Quality of landmark	
Good	54
Poor	6
None	0

Table No. 2: Factors affecting the incidence of postdural puncture backache

Factors	PDPB(n=6)	No PDPB(n=54)	Mean difference	95% CI	P
Weight	2	16	4.560	0.887-8.232	0.015
Landmark quality					
Good	5	40			0.002

Poor	1	14			
None					
Skin punctures	2.4±1.7	1.1±0.4			0.016
Needle redirections	2.4±0.7	0.4±0.9			0.014
Space level change	2	19			0.020
First pass success	0	30			0.007
Providers experience	1	20			0.005
Second provider	5	10			0.002
CSF					
Bloody	2	4			0.000
Clear	4	50			

- The study included 60 term parturients undergoing elective or emergency LSCS .
- The patient characteristics ,co-morbidities ,body habitus, quality of landmark are described in table 1.
- The incidence of PDPB was 10% .
- The mean onset of backache was 11.1 ± 7.7 h.
- The mean VAS severity score of PDPB was 3.5 ± 0.5 .
- The mean duration of backache was 2 ± 1.5 days. All patients responded to treatment with paracetamol and diclofenac.
- Factors affecting the incidence of PDPB are tabulated in Table 2. The following factors did not affect the incidence of PDPB: age ($P = 0.606$), elective or emergency LSCS ($P = 0.324$) or parturient in labour ($P = 0.709$), previous spinal anaesthesia ($P = 0.389$), body habitus ($P = 0.125$), bony deformity ($P = 0.875$), occurrence of paraesthesia ($P = 1.000$), contact of spinal needle with bone ($P = 0.078$), duration of surgery ($P = 0.058$), time to sitting ($P = 0.346$) and time to ambulation ($P = 0.748$), occurrence of PDPH ($P = 0.628$).

4. Discussion

The backache was mild to moderate in intensity, of short duration and responded to paracetamol and diclofenac by oral or intravenous route.

Incidence of PDPB is seen to be more in:

- Overweight patients
- Quality of spinal landmarks
- Number of skin punctures
- Spinal needle redirections
- Intervertebral space level change
- Need for taking over by second anaesthesia provider
- bloody cerebrospinal fluid

The incidence of PDPB in patients undergoing LSCS under spinal anaesthesia with 25-gauge spinal needle was 5% in the first 24hrs and 9.5% on day 3 of spinal anaesthesia[8]. Increased weight and unco-operative patients led to poor quality of landmarks palpated during SAB placement[9]. This resulted in multiple skin punctures, spinal needle redirections and needle passes. In our study, increased number of skin punctures, needle redirections and needle passes, change in intervertebral space level, taking over by a second provider and first pass failure were associated with an increased incidence of PDPB[10].

We found that patients who had a traumatic tap (blood in CSF) experienced a higher incidence of backache compared to those who had clear CSF on dural puncture. This could be related to multiple attempts during spinal procedure[11].

A significant association has been reported between backache and more than two needle insertions in women undergoing elective LSCS under spinal anaesthesia and was considered to be more due to periosteal trauma than soft tissue injury. The back pain has been attributed to tears in the ligaments, fascia or bone with localised bleeding and straining of the lumbosacral ligaments and joint capsules[12]. It is imperative that serious complications such as epidural haematoma or abscess be ruled out.

However, studies are there which also demonstrated correlation between epidural labour analgesia and chronic low back pain. According to one study, women who received cesarean delivery with epidural anesthesia were found to have higher risk of low back pain than women undergone vaginal delivery [13]. Pregnancy related low back pain could persist for as long as whole life from immediately after parturition. Low back pain could present as either pelvic girdle pain or between the posterior iliac crest and gluteal fold or as a persisting lumbar pain over and around the lumbar spine

5. Conclusion

The incidence of PDPB was 10% in patients undergoing LSCS under subarachnoid block given by resident doctor. The onset of backache was within 24 hour of spinal anaesthesia and the pain was mild to mod intensity and responded to treatment with paracetamol and diclofenac. Factors associated with PDPB included increased weight, poor quality of spinal landmarks, increased number of attempts and spinal needle redirections and occurrence of bloody tap. Association was also noted between PDPB and provider experience.

It was noted that the patients who are complaining of backache after subarachnoid block mostly primigravida, unco-operative or obese patients due to poor positioning during SAB given by resident doctors. This resulted in multiple skin punctures, spinal needle redirections, needle passes, first pass failure, change in intervertebral space level, more than 2 attempt by resident doctor, bloody CSF tap taking over by a second provider and the SAB was given by second provider.

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