Section: Anaesthesiology

Original Research Article

STUDY OF THE INCIDENCE OF POST DURAL PUNCTURE BACKPAIN IN POST CAESAREAN PATIENTS

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Abstract

Background: Caesarean section is a one of the most common surgery performed under spinal anaesthesia. These patients are always feared about the development of chronic backache after administration of subarachnoid block. Thats why we start this study to see the incidence of chronic backache after postural puncture in our institute this patient. **Materials and Methods:** In our study we took 300 patients posted for emergency and elective LSCS both. Subarachnoid block was performed with 1.8–2.2 ml of heavy bupivacaine by using 23 G& 25G Quincke needle. During the procedure patient was in sitting position, midline approach at the L3–L4 or L4–L5 inter-vertebral space. PDPB on days 1, and 3 on personal visit and on 7 th day,1month and 3month telephonically. PDPB was defined as continuous pain and tenderness over the lumbar area around the spinal needle insertion. We have also included this pain with or without any radiation to lower limb. **Result:** On day 1 around 83 percent patient have backache at injection site. on day 3 this incidence of backache at injection site was around 56% while on day 7 this incidence decreased up to 30 % On first month interview 10 percent patient have backache while on repeat interview on 3 rd month this incidence was 1.3 percent. So only 1.3 % patients developed chronic backache after spinal anaesthesia, the incidence was so low that there was no association between needle size and chronic backache. **Conclusion**: According to our study the incidence of chronic post dural puncture backache is 1.3% in the obstetric population. The onset of backache was within 24 h of spinal anaesthesia and resolved within a month. This pain is having no association with needle size used for dura puncture.

INTRODUCTION

Spinal anaesthesia is the most common regional anaesthesia used for various surgeries. Caesarean section is a one of the most common surgery performed under spinal anaesthesia. These patients are always feared about the development of chronic backache after administration of subarachnoid block. Thats why we start this study to see the incidence of chronic backache after postural puncture in our institute this patient so that we can calculate the real incidence of post dural puncture backache. Postural puncture backache (PDPB), which is characterized by continuous pain around the site of spinal puncture. It is a common complication after spinal anaesthesia.[1] This backache can be associated with radiculopathy. The reported incidence of PDPB ranges from 2% to 29%.[2,3] Commonly performed approaches for subacarchnoid block are median and paramedian approaches. In the median technique, the needle is passes through the supraspinous ligament, interspinous ligament, ligamentum flavum, and epidural space, piercing the dura mater. In the paramedian technique. In this technique, the interspinous and supraspinous ligaments are not penetrated, and the ligamentum flavum is the first structure the needle encounters. This trauma to the ligaments is responsible for post dura puncture backache. In our study we have used both the apporoches for subarachnoid block in caesarean section.

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MATERIALS AND METHODS

This study is Prospective observational study which is started in our institute after approval of Institutional Ethical Committee. time period of study was 6 months. The primary objective of our study is to estimate the incidence of PDPB in post caesarean females with the secondary objective to determine the association of incidence of PDPB from using different size of spinal needles. We have included all the antenatal patients posted for LSCS. Informed written consent were taken from all patients included in the study. In this study we have included the, different size of needles in relation with backache. In our study we took 300 patients posted for emergency and elective LSCS both. Exclusion criteria was Patient Refusal for consent, Uncooperative patient and all the patients who received general anaesthesia patients with history of chronic backache were also excluded from the study.

Subarachnoid block was performed with 1.8–2.2 ml of heavy bupivacaine by using 23 G& 25G Quincke needle. During the procedure patient was in sitting position, midline approach at the L3–L4 or L4–L5 inter-vertebral space.. The number of attempts for successful dural puncture and needle size was noted. Successful identification of the subarachnoid space with one skin puncture and no redirection of the spinal needle was considered as first pass success. Postoperatively, paracetamol 1g IV 8- hourly was given for analgesia. Injection Diclofenac 75 mg intramuscularly given at 12-hourly interval for postoperative analgesia. Patients were assessed for PDPB on days 1, and 3 on personal visit and on 7 th day,1month and 3month telephonically. PDPB was defined as continuous pain and tenderness over the lumbar area around the spinal needle insertion. We have also included this pain with or without any radiation to lower limb.[3] The presence, onset, severity and duration of backache were recorded. Severity of PDPB was assessed by NRS Scale .in this score; 0 = no backache, 1–3 = mild backache, 4–7 =moderate backache, & more then;7 = severe backache. Factors associated with PDPB were analysed.

RESULTS

Statistical analysis was performed by calculating the percentage of PDPB on day 1,3,7 and 1 month, 3 month duration. On day 1 around 83 percent patient have backache at injection site. on day 3 this incidence of backache at injection site was around 56% while on day 7 this incidence decreased up to 30 % On first month interview 10 percent patient have backache while on repeat interview on 3 rd month this incidence was 1.3 percent. So only 1.3 % patients developed chronic backache after spinal anaesthesia, the incidence was so low that there was no association between needle size and chronic backache.

DISCUSSION

Backpain is the highly common health condition in whole world which causes significant changes in the quality of life. The global burden of disease study study 2016 reported lower backache in the top years live with disability [YLD]contributing 57.6 million of total YLDs largely because of ageing. In india backpain and neck pain is ranked as second leading cause of YLD after iron deficiency anaemia.[4] Due to this high prevalance of backache in Indian population there is also a great fear of developing backache after spinal anaesthesia .it is so frequent in our srtupthats it gave us motivation to start s study to calculate the incidence of backache after spinal anaesthesia .Backache after spinal anaesthesia is the major cause of refusal for spinal anaesthesia in 13.4 percent patients out of 1000 patients.[5]When we took consent for spinal anaesthesia and elaborate the whole procedure first question asked by patients is that will we develop chronic backache after the procedure? And it is very frequent. As we also know that One of the most common complications of spinal anaesthesia is low back pain. Rhee et al,[5] this fear also causes patient dissatisfaction after spinal anaesthesia and this rate is around 4%[54/1191]

Postural puncture backache (PDPB), which is characterized by continuous pain around the site of spinal puncture it can be associated with radiculopathy. We took pain assessment of day 0,7, day and on 1month and 3 monthinterwal after 3 months it is considered as chronic backache.

As we know many factors were thought to be responsible for the incidence of post-spinal backache. Trauma due to needle injection, hematoma, excessive stretching of the ligaments until infection that leads to abscess are possibly being the main causes of the post-spinal backache.[6] Commonly performed approaches for subacarchnoid block are median and paramedian approaches. In the median technique, the needle is passes through the supraspinous ligament, interspinous ligament, ligamentum flavum, and epidural space, piercing the dura mater. In the paramedian technique. In this technique, the interspinous and supraspinous ligaments are not penetrated, and the ligamentum flavum is the first structure the needle encounters. This trauma to the ligaments is responsible for post dura puncture backache. In our study we have used both the apparoches for subarachnoid block in caesarean section. 83 percent patient have PDBP on day 1. On day 3rd this incidence was 56 percent while on day 7 this was 30 percent. On first month interview 10 percent patient have backache while on repeat interview on 3rd month this incidence was 1.3 percent. These all pain comes in the group of mild to moderate pain score. Which require no

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medications to control pain. During first week after spinal anaesthesia backache was of inflammatory in origin due to trauma by needle and supine position after 1month the incidence reduced to 10 percent and this reduce to 1.3 percent after 3months so only 1.3 percent patient developed chronic backache. In whole study of 300 patients one patient developed severe backache with radiculopathy but unfortunately this patient didn't come for follow up. Only 2 patients of chronic backache visited to orthopaedics OPD and their backache who required medication to control backache. These patients significantly improved after calcium vitamin D supplementation and physiotherapy. The other factors can also be associated with this chronic backache in postpartum period is long breastfeeding sitting hours in first three months. which lead to calcium, vitamin D deficiency and postural back muscles spasm. Painfull memory of needle pricking pain is also associated with backache.

Other factors that could increase the post-spinal backache after Caesarean Section are duration of mobilization during surgery and also surgical positioning. Besides that, the pregnancy itself has the risk of having low back pain, both during and also after delivery. Few studies showed that at least half of the pregnant population is having low back pain. In addition to this the persistence of low back pain until 6 months of delivery can happen for up to 40% of the patients.[7] So it means that, by just being pregnant, a patient has a quite big risk of having low back pain. And to have the delivery with anesthesia and also Caesarean section will increase the risk of having low back pain.

The incidence of backache after spinal anaesthesia when compared with backache after general anaesthesia actually is not significantly higher. A study from Benzon et al,[1] managed to show that the incidence of back pain after spinal and general anaesthesia was not significantly different. They have also put together a variety of similar studies that show the same thing

The other factors related with post dura puncture backache was the association with needle size but in our study we didn't found and association. Akdemir et al,[8] through research on 682 patients used two different types of needles. They used 26G needles from Atraucan and Quincke. Although all the samples included were patients with one attempt success while performing spinal procedures, the research showed that there was no statistically significant difference between the two needles.

CONCLUSION

According to our study the incidence of chronic post dural puncture backache is 1.3% in the obstetric population. The onset of backache was within 24 h of spinal anaesthesia and resolved within a month. This pain is having no association with needle size used for dura puncture.

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