



A STUDY OF POST DURAL PUNCTURE HEADACHE USING VARIOUS SIZES OF SPINAL NEEDLES

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ABSTRACT

Spinal headaches occur in up to 40 percent of those who undergo a spinal tap (lumbar puncture) or spinal anesthesia. Both procedures require a puncture of the tough membrane that surrounds the spinal cord and, in the lower spine, the lumbar and sacral nerve roots.

During a spinal tap, a sample of cerebrospinal fluid is withdrawn from your spinal canal. During spinal anesthesia, medication is injected into your spinal canal to numb the nerves in the lower half of your body. If spinal fluid leaks through the tiny puncture site, you may develop a spinal headache.

Most spinal headaches — also known as post-lumbar puncture headaches — resolve on their own with no treatment. However, severe spinal headaches lasting 24 hours or more may need treatment.

Post-dural puncture headache (PDPH) is one of the most common complications encountered by physicians following spinal anesthesia or lumbar puncture.

This study was done for evaluating the incidence of PDPH following spinal anesthesia in the south Indian population using various gauges of Quinckes spinal needle.

KEYWORDS : Headache, Dural, Meninges, Spinal Needle.

INTRODUCTION:

Spinal headaches occur in up to 40 percent of those who undergo a spinal tap (lumbar puncture) or spinal anesthesia. Both procedures require a puncture of the tough membrane that surrounds the spinal cord and, in the lower spine, the lumbar and sacral nerve roots.

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Regional analgesia was first introduced in clinical practice by the German surgeon Karl August Bier (1898), who injected cocaine into subarachnoid space of seven patients, himself and his assistant, Hildebrandt [1]. Its preference is because of its advantages over general anaesthesia. These advantages include: easy technique, rapid onset, simple performance, requirement of minimum equipments and monitors, little effects on blood biochemistry, optimum levels of arterial blood gases, conscious patients during surgery and maintenance of airway patency, less post operative care and provide good analgesia [2]. PDPH does not occur in all patients who received lumbar puncture for diagnostic or anaesthetic reasons and is found to be more common after Caesarean Section (CS) in young parturients [3,4]. For many years ago less refined and thicker spinal needles were being used and the incidence of PDPH was high [4–6]. But within the last three decades more refined and thinner needles of 25-31G have been used more often and the incidence of PDPH is reduced to be 0–5% [7]. Although it may be transient, mild PDPH may persist for hours or many weeks and can be severely incapacitating [2]. Previous studies have reported a reduced incidence of headache in young patients with the use of a 29G needle, with the incidence varying between 0% and 2% [7].

The present study was undertaken to compare the use of 23G, 25G and 26G Quincke point needles in three groups under spinal anaesthesia with regard to the frequency and severity of PDPH and the difficulty in performing spinal anaesthesia.

AIMS AND OBJECTIVES:

To study the Post Dural Puncture Headache Using Various Sizes of Spinal Needles.

MATERIALS AND METHODS:

the study was conducted in Department of Anesthesiology,

A.J.Institute of Medical Sciences from a period of December 2018 to September 2019.

A total of 90 patients who were planned to undergo surgery under spinal anesthesia, and satisfying the inclusion criteria were enrolled into the study.

The study subjects were randomly divided into three groups, Group I, II, and III each consisting 30 patients. All patients were uniformly preloaded with intravenous ringer lactate 10 ml/kg and positioned in sitting position for lumbar puncture. Under all aseptic precautions, a lumbar puncture was made in the L3-L4 interspace using Quinckes spinal needle of size 23 gauge, 25 gauge, and 26 gauge, respectively, in patients belonging to Group I, Group II, and Group III. In all the study, subjects uniformly 0.5 ml of cerebrospinal fluid (CSF) was allowed to spill out before injecting the local anesthetic.

Patients complaining of the headache and satisfying the criteria for PDPH as laid out by International Society of Headache were diagnosed to have PDPH and treated accordingly. Moreover, the severity of headache was assessed using Cocker's scale.

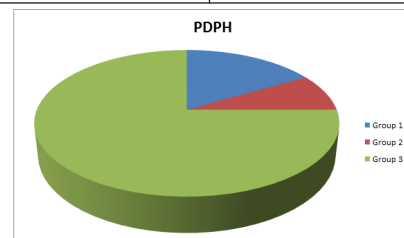
RESULT:

Table 1 : Age Distribution

	Group 1	Group 2	Group 3
Age	36.82	38.75	39.73
Standard Deviation	1.95	3.87	5.87

Table 2: Incidence of PDPH

Group	Incidence
Group 1	04
Group 2	02
Group 3	18



Graph 1: Incidence of PDPH

Table 3: Test for Significance

Frequency	P Value	significance
18	0.0003	Significant

DISCUSSION:

Simply decreasing the size of epidural needles from 16 to 18 gauge has been reported to reduce the incidence of PDPH from 88% to 64%. [8] Norris et al found the incidence of moderate-to-severe PDPH after ADP was only 24% when the needle bevel was oriented parallel to the long axis of the spine (compared to 70% with perpendicular insertion). This resulted in fewer therapeutic EBPs administered to patients in the parallel group ($p < .05$). However, this technique necessitates a controversial 90° rotation of the needle for catheter placement.[9].

Spinal headache symptoms include:

- Dull, throbbing pain that varies in intensity from mild to incapacitating
- Pain that typically gets worse when you sit up or stand and decreases or goes away when you lie down

Spinal headaches are often accompanied by:

- Dizziness
- Ringing in the ears (tinnitus)
- Hearing loss
- Blurred or double vision
- Nausea
- Neck stiffness

Causes

Spinal headaches are caused by leakage of spinal fluid through a puncture hole in the tough membrane (dura mater) that surrounds the spinal cord. This leakage decreases the pressure exerted by the spinal fluid on the brain and spinal cord, which leads to a headache.

Spinal headaches typically appear within 48 hours after a spinal tap or spinal anesthesia.

Sometimes epidural anesthesia may lead to a spinal headache as well. Although epidural anesthetic is injected just outside the membrane that surrounds the spinal cord, a spinal headache is possible if the membrane is unintentionally punctured.

RISK FACTORS

Risk factors for spinal headaches include:

- Being between the ages of 18 and 30
- Being female
- Undergoing procedures involving the use of larger needles or multiple punctures in the membrane that surrounds the spinal cord
- Having a small body mass

CONCLUSION:

With Quincke spinal needles, the incidence was found to be minimum with 25 G needle.

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