

Journal of Pharmaceutical Advanced Research**(An International Multidisciplinary Peer Review Open Access monthly Journal)**Available online at: www.jparonline.com**Postdural Puncture Headache: A case report of Serious Adverse event in Tertiary Care Hospital, Karnataka****Thejaswini B*, Reeja Jiji**

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ABSTRACT:

Headache has been a well-known consequence, since the introduction of spinal anaesthesia. Postdural puncture headache (PDPH) can appear anywhere from 24 h to seven days following the puncture. It is also known as 'post lumbar puncture headache' (PLPH). Age, gender, needle size, needle design, the direction of the bevel, and the number of lumbar puncture attempts are all factors that influence PDPH. We report a case of postdural puncture headache which was recorded as a serious adverse event. A 28-year-old man received 200 mg of lignocaine under spinal anaesthesia and, after post-op day 1, the subject complained of throbbing bilateral headache and severe neck pain. These symptoms occurred when he got up and disappeared after he remained in the supine position. His symptoms disappeared during the hospitalization with the administration of drugs like IV fluids, aceclofenac, paracetamol, and piroxicam. Hence, it's important to determine the reason for the development of this headache. Therefore, knowledge of clinical characteristics and differential diagnoses of PLPH is very important.

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INTRODUCTION:

Spinal anaesthesia has been the conventional method for surgery below the umbilicus in healthy patient for many years^[1]. According to the International Classification of Headache Disorder, PDPH is described as a headache occurring within 5 days after lumbar puncture (LP) and is aggravated when standing or sitting and relieved when lying flat^[2]. It can appear anywhere from 24 h to seven days after the puncture. About 90 % of postdural puncture headaches appear within three days following the procedure, and 66 % appear within 48 h. A dural

puncture on a regular basis raises the risk of postdural puncture headache ^[1].

The clinical presentation includes dull and throbbing, bilateral headache, stiff neck, hearing loss, tinnitus, photophobia, hyperacusia, and nausea ^[3]. It's a typical lumbar puncture complication, caused by the leakage of cerebrospinal fluid (CSF) into the epidural space due to a dural tear, resulting in lower CSF pressure ^[2,4]. Patient-dependent factors like age, gender, and various controllable risk variables, such as needle size, needle design, the direction of the bevel, and the number of lumbar puncture attempts, all contribute to the development of headache ^[1,2]. Pregnant women are more likely to have PDPH. As a result of this suspicion, the clinician should perform a septic screen, a co-axial tomography (CT) scan, and, if necessary, neurology consults ^[4].

Most PDPH resolves on its own, and in some cases, it lasts for months or even years ^[1]. Several treatment options have been recommended to treat PDPH, including the use of rehydration, acetaminophen, anti-inflammatory nonsteroidal drugs, opioids, caffeine, sumatriptan, and epidural blood patch. Conservative management may include fluid therapy, the supine bed rest position improves patient comfort and avoids the aggravating effect ^[5]. Therefore, this study aimed to determine the reason for the development of headaches among postoperative patients.

CASE REPORT:

A 28 year old male patient was admitted under general surgery with complaints of multiple sebaceous cysts over the scrotum for 2 years. On examination, it was found that multiple swelling over the scrotum had an initial size of about 0.5×0.5 cm, which was insidious in nature and gradually progressive with pain, followed by thick white discharge, which was found from the opening of one swelling. Later, the patient underwent excision of sebaceous cysts over the scrotum under spinal anesthesia with an injection of lignocaine (200 mg/ml). On post-op day 1, the patient complained of throbbing bilateral headache and severe neck pain. The symptoms developed when he woke up and disappeared after he continued in the supine position for a few minutes. There were no other associated symptoms like seizures, hearing loss, tinnitus, photophobia, and hyperacusia. The patient was conscious with a pulse rate of 85 bpm, blood pressure of 120/90 mm Hg, and respiratory rate of 20 cpm. Hematocrit (16.2 %) and urea

(15.7 %) were reduced. He had no history of hypertension and type-2 diabetes mellitus. The treatment advised to the patient includes intravenous fluids and a tab. Zerodol (aceclofenac and paracetamol), tab. DolonexDT (piroxicam). These two drugs that belong to NSAIDs, inhibit cyclo-oxygenase (COX) enzymes, resulting in a decrease in the formation of prostaglandin precursors thereby reducing the pain and inflammation. In this case, in order to administer the local anesthetic into the middle of the lower back, several attempts were done, which resulted in the loss of cerebrospinal fluid reduces the fluid balance surrounding the brain, which causes the brain to sag downward. Thereby the surrounding nerves and tissues become stretched, which leads to a headache. Hence, it was found that the patient had acquired PDPH as a result of several lumbar puncture attempts.

DISCUSSION:

Postdural puncture headache is the most common complication of dura puncture and presents hours to days later with a typical dull or throbbing headache that is worsened when the patient assumes a standing posture and recovers when supine. The postural nature of the headache is very distinctive and the symptoms are generally self-limiting, but at times it may be severe enough to immobilize the patient ^[6]. It was first reported in the late 19th century after Bier used himself as a subject to exhibit spinal anaesthesia ^[4]. There are several approaches to reduce the risk of this complication that has been suggested in the 2000 and 2005 American Academy of Neurology guidelines. This consists of the use of small-bore needles, atraumatic (uncut/pencil-point) needles and, when using these needles, reinserts the stylet before needle withdrawal ^[7]. Postdural puncture headache may also delay hospital discharge. An epidural blood patch (EBP) remains the most reliable treatment for PDPH, with the resolution of symptoms commonly seen after an EBP procedure ^[8].

Headache after lumbar puncture occurs more frequently in young adults, especially in the age group of 18 to 30 years. Young women with low body mass index and women who are pregnant have the utmost risk of developing headaches after a lumbar puncture ^[6]. According to one cross-sectional study, the incidence of PDPH was 30 % in males and 70 % in females, and it was 2.33 times higher in the 18 to 30 year age group than in the 31 to 45year age group ^[1]. PDPH also can occur after a spinal puncture in healthy volunteers due to

the pressure gradient between the intradural and extradural spaces, CSF leaks into the epidural space through the opening on the duramater. Because the CSF pressure gradient in young adults is higher than in the elderly, CSF loss and the risk of PDPH are more common in them^[9]. According to some study findings, a 22G needle is the finest for lumbar puncture, because thinner needles require a way longer time for CSF collection. The differential diagnosis criteria include severity, onset, features, postural involvement, level of consciousness, and other relevant symptoms, such as the stiff neck, fever, visual disturbances, photophobia, asthenia, paralysis, cranial nerve palsies, and convulsions^[10]. According to the subject's symptoms, the headache was much closer to a PDPH than other illnesses.

To reduce the incidence of PDPH, the specialist should perform a lumbar puncture using an atraumatic needle^[11]. This case report has some limitations, although the subject presented with headache and severe neck pain and did not undergo spinal magnetic resonance imaging. As a result, we can't rule out the chance of an epidural abnormality. Although limitations exist, this case report deserves discussion for future studies^[11].

CONCLUSION:

The rate of PDPH is frequent and high among young age and obstetric patients. It can be prevented by the use of a small spinal needle, avoiding multiple attempts and frequent CSF drops during spinal anaesthesia. The contributing factor in the occurrence of PDPH is the position after spinal anaesthesia. This is a well-known complication of neuro-anesthesia, which can delay hospital discharge. In this case, it was discovered that the patient had acquired PDPH as a result of several lumbar puncture attempts. Therefore, knowledge of clinical characteristics and differential diagnoses of PLPH is very important.

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