

## Effectiveness of Epidural Blood Patch for the Management of Post Dural Puncture Headache: A Case Done at Negelle Arsi General Hospital and Medical College, Negelle Arsi, Ethiopia

Ashebir Nigussie Yirgu<sup>1\*</sup>, Daniel Gidabo<sup>2</sup>, Aman Safawo Dalecha<sup>1</sup>

<sup>1</sup>Department of Anesthesia, Negelle Arsi General Hospital and Medical College, Negelle Arsi, Ethiopia; <sup>2</sup>Department of Surgery, Negelle Arsi General Hospital and Medical College, Negelle Arsi, Ethiopia

### ABSTRACT

Post dural puncture headache is one of the main post spinal complication or unintentional puncture of dura particularly in clients with high intrabdominal pressure like obesity, and young adults. None of the interventions tried to avoid and treat Post Dural Puncture Headache is 100% definite. We presented an incident of one effective attempt of epidural blood patch with 20 ml of autologous blood to treat severe PDPH caused by 22-gauge needle Lumbar puncture in 29 years old male patient diagnosed as prepatellar bursitis with fluid collection. Currently the best management of severe PDPH was epidural blood patch, which lead to improvement of symptom in 93% of clients after single EBP and in 97% after second EBP.

**Keywords:** Postdural puncture headache; Epidural blood patch; Prepatellar bursitis

### INTRODUCTION

Postural puncture headache is the common problems after lumbar or unintentional puncture of dura while inserting epidural catheter, mostly because of drain of cerebrospinal fluid to epidural space through dura hole. Post-Dural Puncture or Low-Pressure Headache (LPH) is postural and usually self-limiting, appearing on first or second postoperative day and lasting less than seven days. PDPH is typically the post dural character of dull pain in fronto-occipital and often associated with neck stiffness. The headache may be associated with other symptoms such as nausea, vomiting, hearing loss, tinnitus, vertigo and dizziness. The pain worsens by sitting position and relieve by supine. Different ways are tries to avoid and manage Postural puncture headache within constant outcomes. Presently epidural blood patch is the usual method for Post-dural puncture headache management, with an outcomes varied between 90% to 99%. We come with an event of 29 years male patient with prepatellar bursitis and fluid collection post for bursectomy. He had a lumbar puncture with needle of 22-gauge and develop PDPH, in which effectively treats by EBP.

### CASE PRESENTATION

29 years old 75 kilogram male patient admitted to surgery ward for complaint of swelling of right knee of 2 months duration. He has history of falling from motor bicycle. He has some complain of pain on the right knee. He was a chronic chat chewer. His V/S (vital signs) was Heart rate-90 beat/minute, Arterial blood pressure-100/70 mmHg and Respiratory rate-16/minute. He observed with knee ultrasound and detected as prepatellar bursitis with fluid collection. His abdominal U/S and X-Ray result and his hematological investigations were normal. He was scheduled for possible Bursectomy to perform with intrathecal anesthesia. Inside Operation theatre, after functionality of intravenous was checked, all monitors were applied. Next to hydrating by 500 milliliter Normal saline (NS), Under strict aseptic technique, intrathecal anesthesia given via spinal needle of 22-gauge with 3 ml of 0.5% bupivacaine and 2 ml of 2% plain lidocaine in between L3-L4 intervertebral space with one attempt. After waiting for some time, failure was confirmed and decided to repeat intrathecal anesthesia with 2 ml of 0.5% bupivacaine, attempted two times. After that, anesthesia sensory level up to T4 was reached and operation begins. But, the client becomes restless. Then, in between he develops mild hypotension (BP of 85/50 mmHg) that treated effectively with

**Correspondence to:** Dr. Ashebir Nigussie Yirgu, Department of Anesthesia, Negelle Arsi General Hospital and Medical College, Negelle Arsi, Ethiopia, Tel: +251967286821; E-mail: ashebirnigussie3@gmail.com

**Received:** October 19, 2020; **Accepted:** November 02, 2020; **Published:** November 09, 2020

**Citation:** Yirgu AN, Gidabo D, Dalecha AS (2020) Effectiveness of Epidural Blood Patch for the Management of Post Dural Puncture Headache: A Case Done at Negelle Arsi General Hospital and Medical College, Negelle Arsi, Ethiopia. J Anesth Clin Res. 11: 976.

**Copyright:**© 2020 Yirgu AN, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

loading of 1 L NS and BP becomes kept in between 105-110/75-85 mmHg. Finally, the procedure was finished after 1 hour of initiation of surgery. Then, the patient was transferred to RR (Recovery Room) with good conditions. In Recovery his V/S was normal. Patient was shifted to postoperative ward with order of Tramadol 50 mg IV TID and Diclofenac 75 mg IM BID for postoperative analgesia. In the ward, he begins to complain headache which is specific to frontal area. Diclofenac 75 mg IM and Tramadol 100 mg intravenous and 1 L NS were loaded but he cannot free from symptoms. On the first postop day, again complain headache which was a front-occipital headache that radiated to his neck and shoulders. Then, Tramadol 50 mg IV and diclofenac 75 mg IM was given and his postoperative period was uneventful. On the second postop day, the headache continued which is associated with nuchal rigidity and some limitation in his daily activities. Then, the order continued with Tramadol 50 mg IV and diclofenac 75 mg IM. On the third postoperative day, the headache was exacerbated and diagnosis of severe PDPH was made.

Then, continued with oral feeding, coffee and gave him 3 L of NS and 1 L of RL, bed rest without pillow and 50 mg of pethidine BID. On the fourth postoperative day, still the symptom exacerbates, the headache get worse if he becomes on sitting or standing position and unable to lift his head associated with nausea and vomiting, tinnitus, vertigo, nuchal rigidity and dizziness. Then, decided to do Epidural Blood Patch (EBP). Vital signs were similar with initial day, but severity of headache was aggravated.

Then, the patient was taken to RR. Written, informed consent was obtained after a careful explanation of the procedure and related complications. Under strict aseptic technique, after he put on sitting position epidural space was sited using 16 G IV cannula needle, by loss of resistance method with distil water. Second anesthetist withdraws autologous intravenous blood from an ante-cubital vein to 20 ml syringe. EBP with 20 ml venous blood was inserted to epidural space over 16 G IV cannula needle. Then, he rest flat for 1 hr in dorsal decubitus position. After that he got immediate change from his indications and transferred to ward. On the first post day of EBP, he was free from his symptoms and sent home with advised to avoid straining, lifting heavy objects, or excessive bending for at least two weeks and instructions to return at any time if his headache worsened.

## DISCUSSION

Post dural puncture headache is typically defined as fronto-occipital headache which radiate to neck and shoulders. The classic PDPH symptom is aggravated by sitting and reduced after client is in flat position. Related symptoms include photo phobia, nausea, vomiting, tinnitus and deafness [1]. It is one of the most common complaints encountered in the delivery ward, with an incidence fluctuating from 11% to 80% of parturient [2].

For the management of post dural puncture headache, bed rest, adequate fluids and non-opioid analgesia are the first-options. The best management for severe post dural puncture headache is epidural blood patch. Another options used for treatment of

PDPH were intra-thecal catheter, epidural morphine, dextran or saline patch [3].

Pregnant women's getting spinal or epidural anesthesia has critical associated factors like younger age, being female; lower body mass index, or previous history of headaches [4].

The percentage of post dural puncture headache differs greatly when different spinal needle sizes were used. For example the percentage of post dural puncture headache were 63.6% with 18 G, 49% with 20 gauge, 31% with 22 gauge, 26.6% with 24 gauge and 8.3% for those spinal needles greater than 24 gauges [5].

Furthermore, insertion of needle with the bevel parallel to the dural fibers aids closure of the hole and minimizes cerebrospinal fluid leakage. So, occurrences of headache can be significantly reduced [6].

In this situation, the cause of post dural puncture headache might be because of reduction in Cerebrospinal fluid pressure from repeated dural puncture at the same level and continuous leakage afterwards. We infused 20 ml autologous blood that reduced symptom of headache. We did not repeat it as client was not criticizing pain after that.

## CONCLUSION

Postural puncture headache occurs after puncture of the dura matter. The most actual method for reducing its occurrence is to use advance techniques that can minimize formation of dural hole during intrathecal anesthesia and inadvertent dural puncture during epidural anesthesia. Clinicians should be cautious and understand associated factors of postural puncture headache while doing intrathecal and epidural anesthesia. Unintentional dura puncture occurs and PDPH remains a challenge for clients. In cautious dural puncture, better to use small size needle to reduce PDPH and possibly EBP effectiveness if the technique is required. For management of PDPH, an epidural blood patch is most effective cure modality, with high outcomes. Usually 15-20 ml of blood is used and if not improved repeated after 24 hrs. Using epidural blood patch is preferable especially in cases where headache is severe enough that the mother is unable to cope with her normal daily tasks and look after her newborn baby. Unless contraindicated, with gentle technique its effectiveness is better and faster than conservative management.

## REFERENCES

1. Park K, Shin K, Ha S, Park J, Kim S. Does lumbar puncture at night prevent post-dural puncture headache? *Acta Neurologica Scandinavica*. 2014;130(3): 204-209.
2. Hayes N, Wheelahan J, Ross A. Self-reported post-discharge symptoms following obstetric neuraxial blockade. *Int J Obstet Anesth*. 2010;19(4): 405-409.
3. Boonmak P, Boonmak S. Epidural blood patching for preventing and treating post-dural puncture headache. *Cochrane Database Syst Res*. 2010; 1.
4. Bezov D, Lipton R B, Ashina S. Post-dural puncture headache: Part I diagnosis, epidemiology, etiology, and pathophysiology. *J Headache Pain*. 2010;50(7): 1144-1152.

5. Kassa A, Beyen T, Denu Z. Post Dural Puncture Headache (PDPH) and associated factors after spinal anesthesia among patients in University of Gondar Referral and Teaching Hospital, Gondar, North West Ethiopia. *J Anesth Clin Res*. 2015;6(536): 2.
6. Seza A, Ates D, Gok F (2008) Needle diameter and design influence post dural puncture headache rate in children. *Pedia Anesth*. 2008;18(12): 1218-1218.