

Subdural Hematoma following Accidental Dural Puncture while Performing Epidural Analgesia - A Case Report

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ABSTRACT

Introduction: Subdural hematoma is a rare but serious complication of accidental dural puncture during epidural or spinal anesthesia. This case report emphasizes the importance of close follow-up of patients with post dural puncture headache following accidental dural puncture and methods to identify development of subdural hematoma in such patients.

Case report: a 23-year-old healthy primigravida developed accidental dural puncture while trying to locate epidural space using a Tuohy needle for painless labor. The patient complained of headache on the 2nd post-operative day that was significantly relieved by analgesics, bed rest and hydration. Later she presented with severe headache that became persistent and lost its correlation with change of posture. Other than feeling nauseated she had no other additional signs and symptoms. Diagnosis of the SDH was confirmed via CT and treated surgically. The patient recovered completely.

Conclusion: One should consider the possibility of subdural hematoma in patients when postdural puncture headache is prolonged or has a change in the character of headache with or without neurological symptoms for an early successful intervention.

Keywords: Postdural Puncture Headache, Subdural Hematoma, Painless Labor

Mass Index of 23.05 kg/m². Technique and inherent risks of epidural anesthesia and catheter placement were explained. During localization of epidural space with an 18 G Tuohy's needle in the lateral position, ADP occurred. Procedure was abandoned and patient counseled. Thereafter, a normal delivery was accomplished uneventfully.

On the 2nd post delivery day, patient complained of headache. PDPH was confirmed and patient put on conservative line of management with combination of two analgesics, oral fluids, caffeinated drinks and two doses of 250 µg of ACTH in 500 ml normal saline. She was advised restricted mobility.

Her PDPH decreased on day 3 and patient decided to go home despite being counseled against it. At home, on the 7th day, PDPH increased and patient returned to hospital. She denied blurred vision, numbness, or weakness but did feel nauseated. She stated that headache had become persistent. No question was asked if it changed with posture. She was counseled for epidural blood patch but refused. Patient again returned home 2 days later with minimal but persistent PDPH despite being counseled against discharge. She remained with headache for 2-3 weeks. In the 4th week, headache aggravated. Patient now attended neurosurgical clinic and CT was done that showed a left sided subdural hematoma (SDH) overlying almost whole of left cerebral hemisphere causing mass effects, slight midline shift and effacement of left lateral ventricle (Fig 1).

PDPSH may be managed conservatively or surgically depending upon the size and patient's symptoms. She was explained about the pro and cons of both these treatment strategies. However, it was emphasized to her that due to large size of her hematoma, it would be more appropriate for its surgical evacuation. After consent, 2 burr holes were made and SDH was uneventfully evacuated under general anesthesia. She made an uneventful recovery and was doing

INTRODUCTION

Occurrence of accidental dural puncture (ADP) while attempting epidural anaesthesia is not very uncommon. The reported incidence varies from 0.19% to 3.6%.¹⁻⁴ The ADP is usually followed by post dural puncture headache (PDPH) with an incidence of 60-80%.⁵ Subdural hematoma following spinal or ADP during epidural anesthesia is very rare. The exact incidence of postdural puncture subdural hematoma (PDPSH) is unknown because of its rarity and also because many such patients are probably managed with conservative line of treatment without any further investigation believing it to be simple PDPH.⁶ This is essentially because of the similarities with the sign and symptoms of PDPH with PDPSH. Patients of PDPSH have been successfully managed conservatively as well as by surgical evacuation of the hematoma.^{7,8}

We here report a young healthy parturient patient who had an ADP while attempting epidural placement of a catheter for alleviating labor pain and went on to develop PDPSH.

CASE REPORT

A 23-year-old healthy primigravida requested for painless labor. She had no significant past medical or surgical history. Her weight was 62 kg, with a height of 164 cm, and Body

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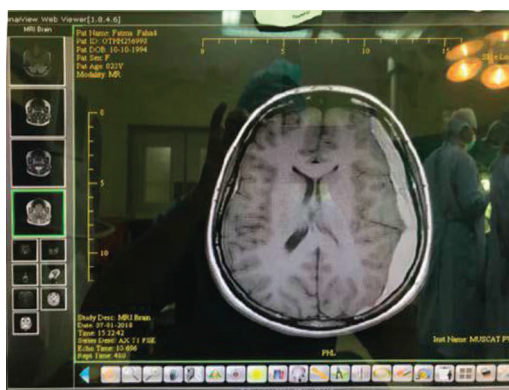


Figure-1: Showing subdural hematoma with a mass effect, slight midline shift and effacement of left lateral ventricle (Picture taken from computer screen).

well till last follow-up a year after hematoma evacuation.

DISCUSSION

PDPH develops as a result of traction produced on the pain sensitive structures and bridging veins of the brain as it starts to sag down due to leakage of Cerebro Spinal Fluid (CSF).⁹ To understand the mechanism of the development of PDPSH, one has to look at the anatomy of the bridging veins that pass directly from cortical surface of brain to dural sinus. These veins have a straight course and lack tortuosity. Thus, downward displacement of brain may occasionally lead to their tearing. Reduced intracranial pressure following CSF loss after ADP causes downward shift of brain, especially when the patient assumes erect posture. This may lead to rupture of fragile bridging veins and subsequent hematoma. It should be remembered that venous congestion during pregnancy makes bridging veins prone to rupture. Prognosis is good if diagnosed early and managed timely.⁶⁻⁸

In our patient, CSF loss following ADP resulted in PDPH. For the initial one week of PDPH the headache was mainly postural. During this period her PDPH could have been treated with epidural blood patch but unfortunately patient refused. However, after one week her headache had become more or less constant and unresponsive to change in posture. Hence it may be presumed that at this stage subdural bleed occurred resulting in PDPSH. A slightly delayed evacuation of the subdural hematoma in this case was as a result of its late diagnosis. It was diagnosed only after a CT was done which was nearly 3 weeks after her headache had become persistent. Had the attending anesthesiologist been more vigilant in noting her changing pattern of headache, PDPSH could have been diagnosed much earlier. Fortunately she made an uneventful recovery.

So what can be the spectrum of signs and symptoms that may indicate PDPSH following ADP? This would include the following: First, change in the characteristic of the headache. Second, lack of response to treatment. Third, absence of improvement when the patient is recumbent. Fourth, associated neurological symptoms. Lastly, possible worsening of headache if epidural blood patch has been administered.

Averting similar episodes in future should include persuading the patient to remain hospitalized till fully relieved from PDPH with or without blood patch, instruction at the time of discharge from the hospital to inform immediately if neurological symptoms appear or headache recurred. In addition, involve the neurologist early when symptoms change character or become associated with nausea/vomiting, visual cloudiness, disorientation or convulsion despite adequate treatment.

CONCLUSION

In conclusion, one must keep PDPSH in mind to prevent catastrophic results after ADP especially if headache becomes persistent and prolonged with or without additional neurological signs and symptoms. Consultation with a neurologist and an early CT is the most effective and easiest way to rule out intracranial complications in patients with PDPH.

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