Epidural anesthesia is one of the famous, generally safe, and most requested pain relief measures in labor. Nevertheless, it can have some complications though pneumocephalus and subdural effusion are very rare complications.

Case Presentation: A 32-year-old woman presented with a severe persistent headache after a vaginal delivery, where epidural anesthesia was used for pain control. Her brain computerized tomography (CT) scan confirmed pneumocephalus and subdural effusion as a complication of the procedure.

Conclusion: Although headache can be present in many women post-delivery, investigations should run in susceptible women with alerting signs.

Keywords: Anesthesia, Epidural, Pneumocephalus, Subdural effusion, Headache

which may occur up to 80% in women. While tension headache and migraine continue as the leading causes, other precipitating factors should be investigated in highly suspicious patients (4).

Pneumocephalus is defined as the presence of gas or air within brain parenchyma or ventricular cavities (5). Different factors are implanted to cause it like tumors or neurosurgical interventions; however, the trauma continues to be the leading precipitating factor (6). The affected patients can be asymptomatic or can present with headache, nausea and vomiting, dizziness, visual alteration, or confusion. Although it is difficult to be diagnosed clinically, some patients experience splashing sounds with the movement of the head (7). Various imaging modalities can be used to identify the air like an x-ray, CT scan, or magnetic resonance imaging (MRI). However, the CT scan is considered the gold standard for the diagnosis (8). The management approach depends on a patient's condition, which can be conservative or surgical interventions. The conservative modalities include rest, analgesia, or positioning (9).

Due to the ball-valve mechanism during the epidural procedure, which allows input but no output, pneumocephalus rarely developed post epidural anesthesia. However, if there were a puncture of the dura during epidural anesthesia, this would lead to air entrapment and suckle upward. This explanation was declared by a meta-analysis showing that 1.5% of patients with epidural insertion will suffer from an accidental dural puncture, and post puncture headache will develop in 52% of these patients (10). It was also revealed that 0.32% and 0.38% of patients developed an accidental dural puncture and post puncture headache, respectively, in another major study. Furthermore, it had been noticed that the higher number of attempts, the greater the injury percentage (11).

Subdural effusion is defined as an accumulation of cerebrospinal fluid (CSF) between the brain’s dura matter and surface. Typically, it can occur as a rare complication of meningitis in infants or secondary to head trauma (12). The affected patients may present with headache, seizures, or symptoms of complications like fever, vomiting, or focal neurological defect. It is usually detected by a CT scan, MRI, or ultrasound of the brain. Subdural effusion management often follows a conservative approach unless complications like infection or hemorrhage occur, requiring a surgical intervention (13).

Subdural effusion may rarely complicate with epidural anesthesia. This complication occurs probably due to the excessive loss of CSF from a dural leak lower in the spinal canal following an accidental dural puncture (14).

To the best of my knowledge, there was no previous report of the two conditions happening simultaneously following epidural anesthesia, although each condition was reported separately on a few occasions.

**Conclusion**

In patients presenting with severe headache post vaginal delivery, a detailed history should be taken with specific questions about the anesthesia mode that the patient received. Additionally, in patients who experience worrisome signs or symptoms, thorough examination and prompt investigation should be carried.

**Ethical issues**

Informed consent was obtained from the patient for publication of the report.

**References**


5. Álvarez-Holzapfel MJ, Aibar Durán J, Brió Sanagustin S, de Quintana-Schmidt C. (Diffuse pneumocephalus after

![Figure 1. (A) CT brain showed subtle effacement of basal cistern (red arrow). (B) CT brain showed Intraventricular pneumocephalus (red arrows). (C). Intraventricular pneumocephalus (red circles) and bilateral mild frontoparietal subdural effusion (orange arrows).](image)


