tivity and pertinence of the sliding cursor moving along the blue line should encourage the VAS for pain level scoring in EM.

KOLIA G. MILOJEVIC, MD
J.-P. CANTINEAU, MD
R. RUIZ, MD
B. COUDERT, MD
S. BATAILLE, MD
F. BOUTOT, MD
N. SIMON, MD
Y. LAMBERT, MD
Mobile Intensive Care Units and Emergency Departments
Versailles District Hospitals
Versailles, France

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POSTPARTUM HEADACHE RESULTING FROM BILATERAL CHRONIC SUBDURAL HEMATOMA AFTER DURAL PUNCTURE

To the Editor:—In the ED patients diagnosed with a chronic subdural hematoma (cSDH) are often characterized by old age, alcohol abuse, or coagulation abnormalities. Besides, cSDH might rarely coincide with other not as prominent conditions.[1,2] To consider a cSDH early in patients who received a dural puncture and present progressive decline in the level of consciousness or a focal neurologic deficit could prevent serious sequelae of a disease with an otherwise good prognosis.

We report the occurrence of a cSDH in a 31-year-old, healthy nulliparous woman, who received an epidural analgesia for labor pain when delivering twins after an uneventful pregnancy. While attempting epidural catheter positioning, an unintentional dural puncture was made, diagnosed by clear cerebrospinal fluid (CSF) drainage. A second catheter was successfully placed through a 17-g Quincke needle and satisfactory pain control was obtained. The vaginal delivery of both babies had to be assisted by vacuum extraction after insufficient decent during the second stage of labor. The mother reported a bifrontally located headache, which got worse on getting up and improved in the supine position. This headache was interpreted as postdural puncture headache (PDPH) which is seen in up to 74% of obstetric patients after unintentional dural puncture.[3] It subsided within 7 days.

On day 17 after delivery, the patient reported a new headache without improvement on lying down. On day 20, she started to feel nauseated, to vomit, and was seen in the ED, where the patient was drowsy but orientated (Glasgow Coma Scale 14). Physical examination did not reveal a focal neurologic deficit. Laboratory tests did not reveal a coagulation disorder.

The computed tomography (CT) scan revealed bilateral cSDHs (Fig 1A) and diminishing of the basal cisterns indicate increased intracranial pressure (Fig 1B). Immediate surgical evacuation was achieved through burr holes on both parietal tubers. Postoperatively, the patient's condition improved rapidly but she reported an inability to name and recognize objects, whereas her visual acuity and visual field were intact. The visual agnosia resolved completely within 3 days. Regular follow- up investigations did not reveal any focal neurologic deficit.

cSDH is a known complication after head trauma in patients with predisposing factors, such as old age, alcoholism, and coagulation disorders.[1,4] cSDHs after dural puncture, spinal or epidural anesthesia are rare. The largest published series on 434 intracranial hemorrhages secondary to regional anesthesia revealed only six cases (1.4%) of cSDHs with a possible link to a primary spinal anesthesia during labor.[2] A study screening 24,000 spinal anesthesias revealed only one subsequent cSDH (4%).[4]

cSDHs form when bridging veins rupture and blood accumulates in the space between the arachnoid and the dura. Electron microscopic data on human bridging veins show thin walls of variable thickness, circumferential arrangement of collagen fibers, and a lack of outer reinforcement by arachnoid trabecules, all contributory to the subdural portion of the vein being more fragile than its subarachnoid portion.[5] This fragility might lead to rupture by traction and tearing in the instant of a head trauma. In the patient we report, the cSDH could have been caused by CSF hypotension. CSF hypotension could be a consequence of CSF outflow into the soft tissue after injury of the lumbar dura.[4,6] CSF loss might be accentuated by increased CSF pressure caused by active bearing down during the second stage of labor. In patients receiving spinal anesthesia, larger needles are used, leaving a larger fistula enabling more rapid CSF drainage.[3] CSF hypotension could have been aggravated by the vacuum extraction assisting the delivery.

The patient we present had no predisposing factors for cSDH. Still the diagnosis of the PDPH had to be doubted because the headache lasted more than 2 weeks. A cranial CT is justified if a suspected PDPH is resistant against conservative therapy, increasing in severity, or recurring after a pain-free interval. Vomiting, somnolence, hemiparesis, hemihypesthesia, aphasia, or signs of personality changes might be present but need not accompany the clinical picture. In bilateral cSDH, unilateral focal deficits could be difficult to recognize. The symptoms could subside after surgical decompression, but permanent neurologic deficits have been reported in old patients and when the hematoma was evacuated only after a long period of time.[1]

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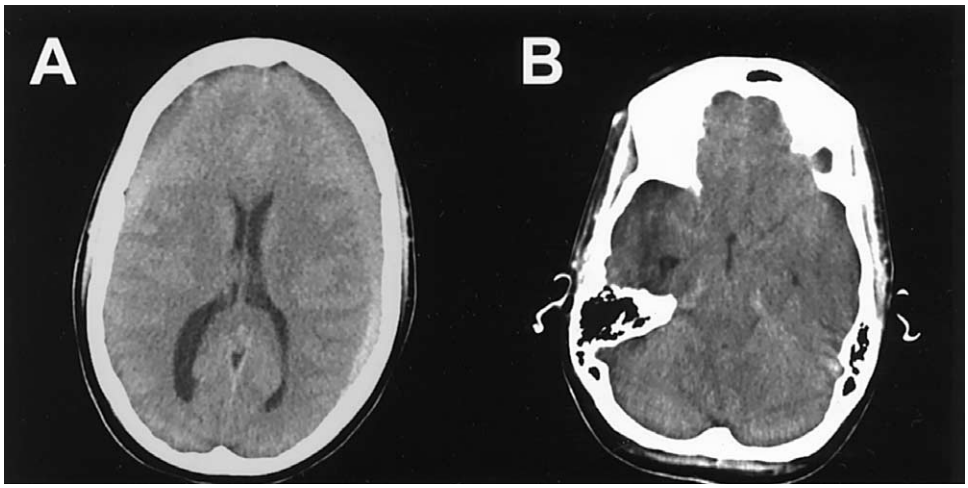

FIGURE 1. Computed tomography scan of the head showing bilateral chronic subdural hematomas at the convexity of both hemispheres (A). The chronic subdural hematoma appears as a mixture of hypo- and hyperdense material corresponding to hemorrhages of different ages. The adjacent cortical sulci are compressed. As a result of bilateral hematoma formation, there is no midline shift. The diminishing of the basal cisterns next to the brain stem (B) indicates increased intracranial pressure and movement of the brain caudally.

In summary, this report highlights the importance of considering a cSDH as differential diagnosis of headache as a rare but serious complication of epidural anesthesia, especially in connection with dural puncture and straining during labor. By the time of hospital presentation, the patient might not link the clinical symptoms to the dural puncture because several days could have passed. Awareness of this diagnosis and treatment are of uttermost importance because in young patients, cSDHs heal without sequelae after evacuation and irrigation through a cranial burr hole.

C.H. NOLTE, MD
Department of Neurology
T.-N. LEHMANN
Department of Neuro Surgery
University Hospital Charite
Berlin, Germany

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ACUTE ABDOMEN IN A JEHOVAH'S WITNESS WITH CHRONIC ANEMIA

To the Editor:—Severe chronic anemia generally interferes with establishment of an accurate diagnosis in patients presenting with acute abdomen. It is particularly difficult to manage those patients, who simultaneously refuse blood transfusion. We report a female Jehovah's Witness patient with severe anemia who was referred for an acute abdomen as a result of twisted adnexa and briefly discuss an informed consent to blood transfusion in patients below 19.

A 19-year-old nuligravid female Jehovah's Witness was transferred by ambulance for an acute abdomen. She was pale, sweating, and drowsy. Her blood pressure was 70/30 mm Hg, hemoglobin 5.1 g/dL, hematocrit 23.4%, and white blood cell count $9000/m^3$ Sonographic examination of the abdomen showed a $10 \times 10 \times 10$-cm cystic mass in the right side of the uterus. A small amount of ascites was detected. A negative pregnancy test ruled out the presence of ectopic pregnancy. Oxygen was administered together with intravenous fluid and low-molecular weight dextran dextrose. Thirteen minutes after parentral infusion, her blood pressure returned to 90/50 mm Hg, and her conscious level improved. A preliminary diagnosis of twisted right adnexa and unexplained anemia with subsequent shock was made. Both the patient and her mother, who were Jehovah's Witnesses, refused blood transfusion. However, her father, who was not a Jehovah's Witness, agreed to the blood transfusion, if medically necessary. There was, thus, disagreement among the patient's family members, but it was decided not to perform the blood transfusion even if medically necessary based on the patient's wishes. Emergent laparotomy, which was performed under general anesthesia, revealed torsion of a right paraovarian tumor together with a right polycystic ovary. No other findings, which made the patient severely anemia, were detected in the abdominal cavity. The finding of necrotic adnexa prevented our attempt to untwist it in the young patient. Accordingly, right salpingo-oophorectomy was performed. Histopathologic examination of the removed adnexa confirmed the operative diagnosis. She has had evidence of low iron intake. In addition, postoperative investigations confirmed the absence of menorrhagic or other hematologic disease apart from iron deficiency anemia (IDA). After an uneventful recovery without blood transfusion, the patient was discharged in good condition.

Jehovah's Witness patients generally refuse blood transfusions even when they need surgery for acute blood loss. Surgical management of Jehovah's Witness patients, who present with acute blood loss as a result of trauma, surgery, or other causes has been reported.[1-3] However, to our knowledge, an emergent operation for a Jehovah's Witness patient with severe IDA of long duration caused by low iron intake has not been previously reported.

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