

PHOTO QUIZ

An 85-Year-Old Man with Gradual Decrease in the Level of Consciousness and Vomiting; a Photo Quiz

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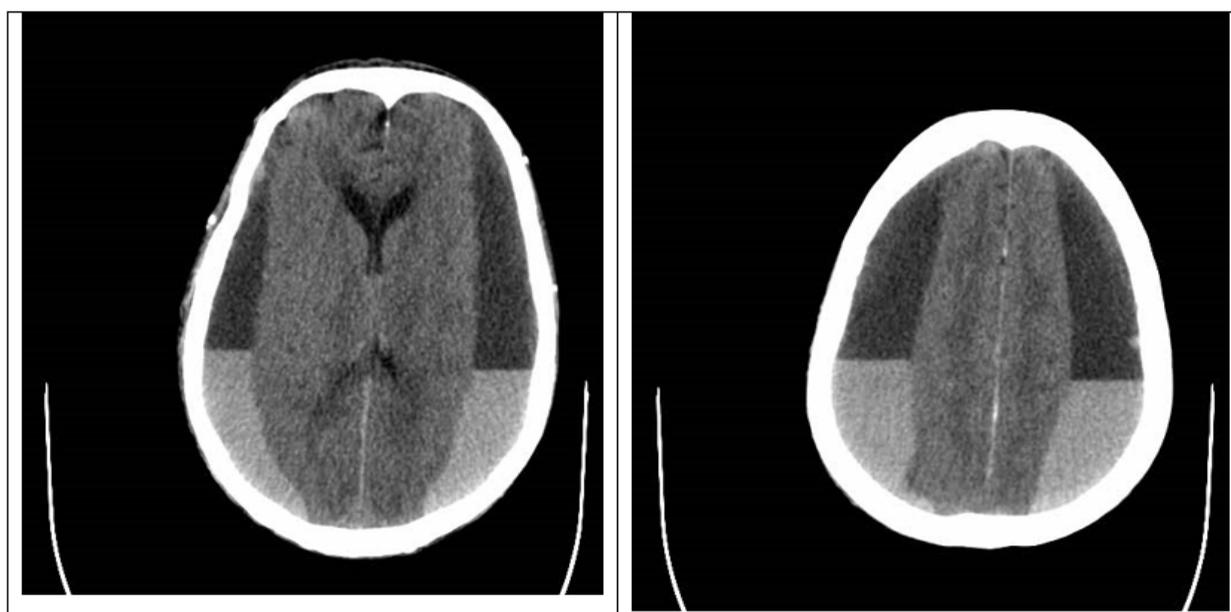


Figure 1: Brain computed tomography (CT) scan of the patient without contrast materials.

1. Case presentation

An 85-year-old male was brought to emergency department (ED) from a nursing facility with gradual onset of lethargy and vomiting from a week ago. No clear history of head trauma and coagulopathy or using of anticoagulant agents. His past medical history included mild cognitive impairment (MCI) and diabetes mellitus, which were treated using

oral agents. On general examination, the patient looked underweight with body mass index (BMI) about 17. Neither specific stationary position of the limbs nor any spontaneous motor behavior were detected. The patient's vital signs on admission to ED were: Blood pressure: 140/60 mmHg, pulse rate: 82 beats/minute, oxygen saturation: 95%, Respiratory Rate: 16/minute, and bedside blood-glucose measurement: 268 mg/dl. The patient was afebrile. On neurologic examination in ED, Glasgow coma scale (GCS) was 10/15 (eye: 3, motor: 5, verbal: 2). Mucosal membranes were dry and patient seemed to be dehydrated. Pupils were equal but had poor reaction to light. Oculocephalic maneuver, corneal reflex, and gag reflex were intact. There was slight decrease

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in muscle tones in lower limbs. Plantar reflex on both sides seemed upright. Arm and Leg dropping test showed equal motor response and deep tendon reflexes (DTR) seemed diminished on both sides. Laboratory tests included: leukocyte count: 12800/mm³ with 85% segmented neutrophils, hemoglobin: 14.1 g/dl, platelet: 268000/microliter, glucose: 234 mg/dl, sodium: 141 mEq/L, potassium: 5.1 mEq/L, Blood Urea Nitrogen (BUN): 36 mg/dl, serum creatinine: 1.3 mg/dl, and international normalized ratio (INR) was 1.24. The patient underwent brain computed tomography (CT) scan without contrast materials, which is shown in Figure 1.

What is your diagnosis?

1.1. Diagnosis

Bilateral subdural hematoma with bilateral hematocrit effect (figure1) without any midline shift or patency in basal cisterns.

1.2. Case fate

The patient underwent bilateral burr-hole insertion, which is shown in Figure 2. Clinical and neurological conditions did not improve after surgery. Unfortunately, the patient died 10 days after surgery due to intubation complications.

2. Discussion

Chronic subdural hematoma (CSDH) is common in older adults, particularly after mild head trauma. This condition is caused by the accumulation of blood or blood derivatives in the subdural space and is usually known as a benign disease (1). The prevalence of CSDH is increasing throughout the world due to the ageing population. The peak age of CSDHs onset has also increased and is regarded as a serious public health problem (2). CSDH symptoms vary from asymptomatic to a clear loss of consciousness and usually become symptomatic more than two weeks after the initial trauma. CSDH symptoms include cognitive deficits, impaired memory, personality changes, and focal neurological signs. Since CSDH can imitate many neurological conditions, it is referred to as the Great Neurologic Imitator (3). Many factors are currently considered effective in CSDH in elderly patients, including, older age, alcohol usage, diabetes mellitus (DM), coagulopathy, antiplatelet and anticoagulant agents, and arachnoid cyst also rarely reported after epidural anesthesia (4). Dehydration and diuretic usage is another risk factor that implicates the occurrence and recurrence of CSDH (5). Obesity, which is a risk factor of CSDH, is also associated with decreased mortality rate after surgical evacuation of the hematoma (6). Bilateral CSDH is far less common than unilateral CSDH, and its clinical and radiological characteristics are scarcely known. Bilateral CSDH progresses faster and has a higher risk of cerebral herniation, resulting in worse

outcomes than unilateral CSDH. Patients with bilateral SDH are less likely to suffer hemiparesis than patients with unilateral SDH. Moreover, the recurrence of SDH is more likely in bilateral cases. Patients with bilateral SDH are older than those with unilateral type, and the prevalence of alcohol use is lower in these patients. The bilateral type is commonly manifested with nausea and vomiting, and midline shift is less likely in these patients. It is most frequently seen in the setting of anticoagulation therapy or coagulopathy (7). Hematocrit effect also called blood-fluid level and hemorrhagic sedimentation is a rare condition and is caused by re-bleeding in CSDH. It is the result of the separation of heavier cellular elements of blood located lower to a lighter liquid supernatant which could be seen on CT or magnetic resonance imaging (MRI) (8). The treatments of SDH include burr hole craniotomy (BHC) (9), the use of corticosteroids as monotherapy or combined with surgery, which decreases the risk of recurrence of CSDH and watchful waiting (10). Surgery is carried out in symptomatic cases, size more than 10 mm, or midline shifts more than 5 mm. Watchful waiting is exercised in patients with small, asymptomatic SDH, with no symptoms indicating increasing intracranial pressure (2). The prognosis is significantly worse in patients over 75 years old compared to those younger than 75 years (7).

3. Conclusion

We should consider the CSDH as an important and probably treatable cause of decrease in the level of consciousness in old age, especially in patients with known risk factors.

4. Declarations

4.1. Acknowledgments

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4.2. Conflict of interest

TM and MS declare that they have no conflict of interest.

4.3. Fundings and supports

TM and MS received no financial support for authorship or publication of this article.

4.4. Authors' contribution

TM and MS both contributed to writing of this manuscript and meet the criteria of authorship.

4.5. Ethical consideration and patient consent

Written informed consent was obtained from patient's son for publication of this case report and accompanying image. The proposal has been approved by the Research Ethics



Figure 2: Post-surgery spiral brain computed tomography scan without contrast after burr hole insertion; revealing appropriate evacuation of subdural hematoma in both sides.

Committees of Alborz University of Medical Sciences.

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