Clinical picture

Milky cerebrospinal fluid and serum in hypertriglyceridemia

A 49-year-old man presented with sudden of change of consciousness and left hemiplegia. He had the history of diabetes mellitus, hypertension and hyperlipidemia; however, he did not receive regular medical treatment. Computed tomography (CT) of brain disclosed a 7.1 × 3.9 cm hemorrhagic lesion (CT number: 70 Hounsfield unit (HU)) in right basal ganglion with suspicious fatty density (CT number: −4 HU) in its peripheral portion and in the ventricles (Figure 1A). Emergent craniotomy and evacuation of intracerebral hematoma were performed. However, deterioration of consciousness developed next day, and repeated CT showed intraventricular hemorrhage with obstructive hydrocephalus. Therefore, emergent hematoma evacuation was done and external ventricle drain (EVD) was inserted. The drainage of cerebrospinal fluid (CSF) showed a milky color, which indicated the possibility of high triglycerides (Figure 1B). In addition, milky serum was noted, and the result of laboratory examinations revealed blood glucose of 289 mg/dl, total cholesterol of 1171 mg/dl, low-density lipoprotein of 197 mg/dl, high-density lipoprotein of 17 mg/dl and triglyceride of 13 611 mg/dl. The diagnosis of severe hypertriglyceridemia-related milky CSF was confirmed. Despite the aggressive supportive care, the patient died 5 days later.

Hypertriglyceridemia can be associated several significant complications, such as cardiovascular disorder and pancreatitis. In addition to primary cause, hypertriglyceridemia can be secondary to other underlying conditions, including diabetes mellitus, hypothyroidism, obesity, hormone therapy, pregnancy, nephrotic syndrome and high-fat diet.1

---

**Figure 1.** (A) CT of brain disclosed a 7.1 × 3.9 cm hemorrhagic lesion (CT number: 70 HU) in right basal ganglion with suspicious fatty density (CT number: −4 HU) in its peripheral portion and in the ventricles. (B) The drainage of CSF showed a milky color.
The diagnosis should be confirmed by laboratory examinations. However, the unusual presentation of milky body fluid and low-density lesions on CT may indicate this disease and suggest further confirmatory test.

Photographs and text from: H.-W. Chen, Department of Internal Medicine, Lotung Poh-Ai Hospital, Yi-Lan, Taiwan; S. W. Lin, Department of Surgery, Lotung St Mary’s Hospital, Yi-Lan, Taiwan; C.-C. Lai, Department of Intensive Care Medicine, Chi Mei Medical Center, Liouying, Tainan, Taiwan. email: dtmed141@gmail.com

Reference