The use of reservoir shunt in chronic subdural hematoma

M. D. Aydin
Department of Neurosurgery, Medical Faculty, Ataturk University, Erzurum/Turkey.

Recurrence chronic subdural hematomas (CSDH) can be a therapeutic challenge. We report the use of reservoir shunts for continuous irrigation and drainage of the subdural space for a prolonged period. This system appears to be more useful than an external drainage system.

Key Words: Subdural hematoma, Cerebral atrophy, Reservoir shunt.

Introduction

Treatment of CSDH in infancy is a therapeutic challenge. A variety of treatment options like subdural tapping, endoscopic washout, shunting and craniotomy have been discussed. The use of continuous irrigation of the subdural cavity with the help of a reservoir shunt in the treatment of CSDH is discussed.

Case Report

An 8-month-old male infant presented with a history of generalized tonic convulsions, persistent vomiting and enlarging head circumference for 3 months. His past medical history was unremarkable. Head circumference was 51 cm. CT scan showed bilateral subdural hematoma. Hematoma was evacuated through a burr-hole and the subdural space was irrigated with isotonic solution. Reservoir shunts were inserted into the subdural space (Figure 1a). Irrigation and drainage of the subdural space was performed by inserting a needle into the shunt chamber once a day for one month. The frequency of the irrigation and drainage was subsequently reduced to once a week in the second month. After the protein content of the subdural fluid had reduced below 210 mg/dl, reservoir shunts were withdrawn and the patient underwent subduro-peritoneal shunt surgery. CT examination, performed two years after the operation, revealed disappearance of the subdural fluid (Figure 1b).

Discussion

Treatment of CSDH of infancy can, on occasion, be a complex therapeutic challenge. The craniocerebral disproportion as a result of increased cranial volume and atrophic cerebral tissue, and recurrent collection of subdural fluid following drainage can be difficult to treat. Burr-hole evacuation and drainage, shunting or craniotomy evacuation of subdural collection, all remain controversial forms of treatment. As the subdural fluid has a high protein content, placement of a conventional shunt system is complicated by repeated blockage.

We observed that intermittent irrigation may be performed by reservoir shunt until the subdural fluid is suitable for shunt surgery. Reservoir shunts are safe and simple and if performed...
with due surgical safety, the risk of infection is minimal.

References


Sudhir Kumar
Department of Neurological Sciences, Christian Medical College Hospital, Vellore - 632004, India. E-mail: drsudhirkumar@yahoo.com

Short Reports

Recurrent seizures: An unusual manifestation of vitamin B12 deficiency

S. Kumar
Neurology Unit, Department of Neurological Sciences, Christian Medical College Hospital, Vellore - 632004, India.

The present report highlights an unusual presentation of vitamin B12 deficiency—recurrent seizures in a 26-year-old man. His symptoms responded to parenteral vitamin B12 therapy. The relevant literature is reviewed.

Key Words: B12 deficiency, Neuropsychiatric manifestations, Seizures.

Introduction

Vitamin B12 deficiency causing neuropsychiatric manifestations such as peripheral neuropathy, subacute combined degeneration of cord, dementia, ataxia, optic atrophy, psychosis and mood disturbances is well known. We report a case with recurrent seizures resulting from vitamin B12 deficiency.

Case Report

A 26-year-old man presented with recurrent episodes of complex partial seizures of three weeks duration. He had developed behavioral changes one year ago characterized by social withdrawal and memory impairment. Prior to admission, he had neglected self-care, had become severely withdrawn and was disoriented. He was treated with risperidone and carbamazepine.

He had impaired concentration, immediate visual and verbal recall, recent and remote memory, and comprehension for three-step commands. Word output was decreased. He had visuospatial disorientation and constructional apraxia. He had impaired distal sensations, exaggerated deep tendon reflexes except for absent ankle jerks. Plantar reflexes were extensor.

Investigations showed hemoglobin 13.2 g%, reticulocyte count 0.1 %, and mean corpuscular volume 114 fl. hypersegmented polymorphs, and moderate megaloblastic changes on bone marrow. Serum B12 assay was 26 pg/ml and folate was 28 ng/ml. Anti-intrinsic factor antibody was positive. Antral biopsy showed atrophic gastritis. CT scan of the brain showed mild cerebral atrophy. EEG showed left temporal epileptiform activity.

A diagnosis of vitamin B12 deficiency with multiple neuropsychiatric manifestations—dementia, psychosis, seizures, and myeloneuropathy—was considered. He was started on intramuscular vitamin B12 injections with which he showed an excellent therapeutic response. He became independent by the end of the third month. Risperidone and carbamazepine were tapered and stopped by six months. At a follow-up period of 24 months, he had been seizure-free for 23 months and was functionally independent.

Discussion

Neurological involvement often occurs along with macrocytic anemia but can occur in the absence of anemia or macrocytosis. It is unclear why vitamin B12 deficiency leads to neurological disease in some and hematological disease in others. Methylene tetrahydrofolate reductase (MTHFR) polymorphism has been postulated to protect the vitamin B12-deficient patients against anemia and homozygosity for MTHFR C677T gene could cause the dissociation between hematological and neurological disease seen in some patients with vitamin B12 deficiency.

Methylcobalamin is required in the central nervous system for myelin synthesis. Hence, a lack of cobalamin leads to either the destruction of myelin sheaths or incorporation of abnormal fatty acids in myelin sheaths, thus leading to impaired neural function and/or transmission. This may be the under-