NORMAL-PRESSURE HYDROCEPHALUS. CASE REPORT

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Abstract: Normal-pressure hydrocephalus is a curable neurological disease, described by Adams and Hakim in 1965, characterized by gait disturbance, urinary incontinence, dementia or cognitive disorders that occur generally in the sixth and seventh decades of life. It has diverse etiology: post subarachnoid hemorrhage, traumatic after posterior fossa surgery, stenosis of aqueduct of Sylvius. In 60% of cases, no cause is identified. Imaging reveals enlargement of the lateral ventricles with compression or thinning of the corpus callosum. Hakim and Adams (1965) offered the hypothesis of “hydraulic press” to explain the enlargement of the ventricles. They said that the process begins with an initial period of increased intraventricular pressure, leading to ventricular dilatation. After the pressure returns to normal, the pulsation of the cerebrospinal fluid acts on a large area of the ventricular walls, as an increased downforce.

Cuvinte cheie: hidrocefalie cu presiune normală, triada lui Hakim și Adams, CT cranian, shunt ventriculo-peritoneal


INTRODUCTION

Hakim and Adams (1965) offered the hypothesis of “hydraulic press” to explain the enlargement of the ventricles.(4) They said that the process begins with an initial period of increased intraventricular pressure, leading to ventricular dilatation. After the pressure returns to normal, the pulsation of the cerebrospinal fluid acts on a large area of the ventricular walls, as an increased downforce. There are no reliable data, but it is estimated that approximately 30% of these patients have a significant history regarding head trauma. It must have had sufficient severity, including loss of consciousness, to be considered as a causative factor. Normal-pressure hydrocephalus (NPH) develops in chronic phase of the craniocerebral trauma in weeks, sometimes months after the original impact. Among cases of NPH, only 10-20% are symptomatic. Because the clinical picture is often associated with the aging process and because the majority of patients with normal pressure hydrocephalus were aged over 60 years old, they assume that they must adapt to these changes.(5) Thus, the symptoms may occur months or even years before the patient sees a doctor. The symptoms of normal-pressure hydrocephalus progress over time.(6) The pace of development is variable and it is often accompanied by a crisis of loss of consciousness that brings the patient to the doctor.

CASE REPORT

We present the case of a male patient, M.G., aged 60 years old, without significant personal pathological antecedents, admitted to the Infectious Diseases Clinic of Alba County for a febrile episode and gait disturbance. Lumbar puncture is performed, the cerebrospinal fluid examination revealing 330 elements and increased proteinuria. Cranial CT scan reveals an internal normal-pressure hydrocephalus. Diagnosis of viral meningoencephalitis and internal normal-pressure hydrocephalus is set and the patient is referred to a specialised centre for the management of hydrocephalus therapeutic conduct.

In the Neurosurgery Department of Sibiu, upon the patient’s examination, a febrile syndrome with gait disturbance has been found, clumsy gait initiation, sphincter disorders of incontinence type and mental disorders. Cerebrospinal fluid examination: 28 elements, smear with 100% mature lymphocytes, proteinuria 1.139 g/l, sterile culture media. Infectious disease consultation recommends the continuation of the therapy. In the context of the data obtained, the surgical intervention is delayed until the patient’s clinical and biological parameters return to normal. After repeated evacuating punctures, there is a clear improvement of patient’s symptoms.

After about a month of hospitalization, the patient returns to the Neurosurgery Department of Sibiu, neurological symptoms being aggravated, emphasizing motor deficits. CT scan, conducted on emergency, highlights communicating panventricular hydrocephalus with signs of activity (periventricular edema was visible and accentuated compared to the previous examination (figure no. 1).
in severe cases. Frequency of urination can sometimes reach 12-24/24h, urinating having a compelling character. Rarely, fecal incontinence can be installed. Some patients do not exhibit such symptomatology. Extrapyramidal signs are common and include resting tremor, cogwheel rigidity, facies like a mask, hypotonia and generalized bradykinesia. Imaging reveals enlargement of the lateral ventricles with compression or thinning of the corpus callosum. The differential diagnosis between normal pressure hydrocephalus and hydrocephalus caused by cerebral atrophy is difficult, if not impossible and it is set only on clinical grounds.

Diagnosis is mainly based on the outcome of the complementary investigations, particularly on radiological and radioisotope studies. Post-traumatic normal-pressure hydrocephalus is defined as an association of posttraumatic hydrocephalus with normal or slightly increased intracranial pressure, dementia, balance disorder and / or urinary incontinence. The clinical effect of shunt in patients with this syndrome is sometimes great, but generally only 50-60% of patients benefit from this treatment.

The patient presents the classical clinical symptomatology of normal pressure hydrocephalus, but the onset is atypical being triggered after a viral respiratory infection with secondary meningeal involvement, without a history of craniocerebral trauma. Cytological changes and increased protein content of the cerebrospinal fluid postponed the surgical intervention, assembling the drainage system after the normalization of the biological samples but with the worsening of the neurological signs. Postoperative evolution after the installation of the drainage system was favourable with the remission of the motor deficits the next day and the progressive improvement of the associated symptoms.

REFERENCES