Normal pressure hydrocephalus in a case of schizophrenia

Sir,

Normal pressure hydrocephalus (NPH) syndrome is a combination of progressive dementia, gait disturbances and/or urinary incontinence, hydrocephalus, and normal intracranial pressure.\(^1,2\) NPH causes no more than 5% of cases of dementia and is often treatable.\(^2\) A 57-year-old gentleman, a known case of schizophrenia for last 20 years on regular medication, started to develop difficulty in holding head, memory disturbances, difficulty in walking, and urinary incontinence for last 2 years. There was no history of trauma or fever. The patient is a known hypertensive since last 2 years, controlled with medication. Initially, the symptoms were ignored, but as he continued to worsen, a magnetic resonance image (MRI) of brain was performed. His general and systemic examination was unremarkable. Neurological examination fundus was normal with normal vision. He was able to walk with support. Blood investigations were normal. Brain MRI was suggestive of communicating hydrocephalus [Figures 1 and 2]. Based on history, clinical features, and imaging findings, a diagnosis of NPH was made. The patient underwent right ventriculo-peritoneal shunt and was showing gradual improvement in his symptoms. Following surgery, the patient had normal neurological and cognitive functions. A dysfunction of the choroid plexus or the telachoroidae is suggested as the cause of ventricular enlargement in normal pressure communicating hydrocephalus and in some schizophrenic syndromes.\(^3\) In communicating hydrocephalus, the function of the telachoroidae could be impaired by infectious or inflammatory processes, while in schizophrenia, a physiologic disorder of cerebrospinal fluid production due to a melatonin deficiency may result in dilated ventricles.\(^3\) The increased water content in the periventricular tissues may impair neuronal function, especially in the long paracentral fibers and the periventricular association neurons.\(^4\) The resulting dysfunction of the periventricular neuronal tissue may explain impaired short-term memory, and may also give rise to extrapyramidal and other symptoms such as gait disturbances, tremor, and ataxia.\(^5\) In NPH, cerebral blood flow is globally decreased and may account for the symptoms of dementia,\(^1\) and it is supported by the evidence that cerebral blood flow may increase after shunting.\(^1,3\) Evans’s ratio, width of largest cortical sulci high in the frontal or parietal regions, and periventricular hypodensity on computerized tomography help to diagnose NPH.\(^1\) As in the present case, periventricular hypodensity and small cortical sulci are associated with improved neurological functions after shunting.\(^1\) Ventriculo-peritoneal shunting remains the most common therapy for NPH. In NPH, success rates of this procedure vary from 33% to more than 90%.\(^3\) The association between NPH and psychiatric symptoms (e.g. depressed mood, delusions, and hallucinations), though rare, has shown benefits on management with shunt procedures.\(^3\) Present case illustrates that in patients with known psychiatric disorder, new onset deficits that...
suggest organic diseases need further investigations as the patients may harbor treatable cause for their symptoms.

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