## Don't Misdiagnose Hydrocephalus as Dementia

BY PATRICIA L. KIRK Contributing Writer

GRAPEVINE, TEX. — At least 6% of patients diagnosed with dementia are actually suffering from normal pressure hydrocephalus, which often can be treated, Dr. Mark S. Maxwell said at the annual meeting of the American College of Osteopathic Family Physicians.

 $Normal\ pressure\ hydrocephalus\ (NPH)$ usually occurs in people with a history of arachnoid insult in which infection or bleeding affects the ability to absorb spinal fluid. And the prevalence of NPH is rising because of improved detection.

However, there are still populations in whom NPH goes unidentified. NPH can be seen on encephalogram, but physicians frequently fail to order this test in elderly patients because cognitive symptoms resemble subcortical dementia, and the symptoms can take years to manifest, explained Dr. Maxwell, chair of Neurology

and Neurosurgery at Hendrick Medical Center in Abilene, Tex.

Unlike hydrocephalus in children, which has a rapid onset, NPH in older populations involves a gradual process of ventricular enlargement that takes years to encroach on surrounding tissue and vessels and affect cognitive function.

The sphere of distended ventricles grows larger over time causing a triad of symptoms, including gait unsteadiness, psychomotor retardation, and urinary incontinence, commonly referred to as wet, wobbly, and wacky.

About 80% of NPH patients exhibit cognitive impairment that is characterized by being inattentive and easily sidetracked, and having memory loss and slow but accurate recall. These patients also lack spontaneity, have trouble forming words, interpreting stimuli, and carrying out simple sequential tasks-all of which may be mistaken for subcortical dementia symptoms.

About 90% of NPH patients are wobbly. These patients have a hard time initiating gait, and often fall down, he said. They also walk slowly, take shorter strides, shuffle their feet, and tend to lean forward and push up on walls or whatever is handy to steady themselves.

After the onset of gait changes, up to 90% of NPH patients develop early symptoms of incontinence, in which there is a sudden sense of urgency to urinate, Dr. Maxwell said.

The urological symptoms stem from poor detrusor contraction. He pointed out that this symptom differs from overflow incontinence in that the need to void

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is a surprise. In diagnosing NPH, Dr. Maxwell provided a checklist: history of wet, wobbly, and wacky; enlarged ventricles on either computed tomography (CT) or MRI; a gradual progressive course of symptoms,

and a history of falls.

Tests should be performed to rule out Alzheimer's disease and dementia. Testing might involve cisternography with a highvolume tap of 50 cc of cerebrospinal fluid (CSF).

Gait tests should be performed before and after a lumbar drain of 50-100 cc/day for 3 days in hard-to-diagnose cases to see if the patient improves, he said, noting that lumbar drain is the standard test.

In the case of NPH from an excess of fluid, a shunt with a valve is implanted to keep fluid from backing up, said Dr. Maxwell. A needle can be inserted so that spinal samples can be routinely checked to see if the shunt is still working.

One-third of patients undergoing this procedure experience significant improvement, one-third stabilize or experience minor change, and the other third continue to decline.

Patients who perform better following a simple tap test are most likely to improve following this strategy.

About 10% of patients undergoing this procedure have complications, but those complications generally are not serious. "Nobody knows how many people actually die from normal pressure hydrocephalus," said Dr. Maxwell. "But with early detection there is definitely a better chance for a good outcome."



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