Acute intrathecal baclofen withdrawal in stiff-person syndrome (SPS)

Bardutzky et al. report an acute and life-threatening intrathecal baclofen syndrome in an SPS patient. Evaluation of the pump system by standard checking methods was negative. Open surgery disclosed a position-dependent catheter leakage.

see page 1976

Intrathecal baclofen: Life-threatening withdrawal

Commentary by Leland A. Albright, MD

Intrathecal baclofen (ITB) is now widely used for treatment of spasticity in cerebral palsy, spinal cord injury, and severe multiple sclerosis. It is also used for movement disorders such as dystonia and, as in the Bardutzky et al. case, stiff-person syndrome. Potential problems with ITB include overdosage, infection, CSF leaks along the catheter, catheter malfunction, and, as Bardutzky's case illustrates, a withdrawal syndrome.

Their case illustrates two important points: acute ITB withdrawal can be life threatening, and ITB withdrawal can be due to catheter leaks that are not apparent on dye studies. The diagnosis of ITB withdrawal is suggested by increased muscle tone and itching. These are the most common symptoms, regardless of the primary cause of the hypertonicity (spasticity, dystonia, etc.). Patients must be educated about the symptoms of baclofen withdrawal and should have oral baclofen tablets available. Whenever ITB withdrawal is suspected, they should immediately begin oral baclofen, usually 20 mg three or four times a day.

When patients present to caregivers with possible ITB withdrawal, they sometimes present with off-and-on symptoms of withdrawal over

Position-dependent fissure (arrow) of the catheter connector.

several days or weeks. In the Bardutzky et al. case and in approximately 10 cases we have seen, the cause is not baclofen "tolerance" and is rarely the pump itself, but rather a catheter problem that is interrupting the ITB infusion, such as an intermittent kink in the catheter or an intermittent egress of baclofen through a leak in the catheter. Such a problem should be

considered if the ITB dosage required has been stable for many months and then inexplicably increases to treat worsening hypertonicity.

Patients who present with persistent symptoms lasting several hours, particularly those who are febrile, must be presumed to have acute baclofen withdrawal and must be treated accordingly. Failure to recognize baclofen withdrawal can be life threatening. The evaluation and treatment need to be carried out within a few hours. Radiographs and pump interrogation can be done within 2 hours. The pump can be programmed to give a bolus of 100 to 200 mcg of baclofen and if there is no response within 4 hours, the side port on the pump can be injected with dye to evaluate catheter patency. However, the value of a dye study in the acute setting is not established; if a leak is corrected, the system needs to be surgically explored as soon as feasible; if no leak is detected, a bolus dose should be given via a lumbar puncture (using IV clonazepam for sedation if needed). If the patient responds to the lumbar dose, the system needs to be explored and replaced regardless of the results of the dye study.

continued on page 1878

Intercellular adhesion molecule-1 (ICAM-1) expression is increased in asymptomatic carotid plaques

Negative control vs ICAM-1.

Nuotio et al. found that ICAM-1 expression is increased in the intima of asymptomatic plaques. They could not confirm the previous observation that ICAM-1 expression is increased on the endothelium of symptomatic carotid plaques. Their observation may correlate with the protective function proposed for smooth muscle cells in an atherosclerotic plaque.

see page 1890

The accompanying editorial by Tan and Blann considers this paper and reviews the possibility that inflammatory processes account for the occurrence of symptoms: TIA and stroke in patients with carotid stenosis. There is earlier evidence for inflammation in vessels—not confirmed by Nuotio et al.—as well as blood markers (such as C-reactive protein) that correlate with symptoms.

see page 1884

Insulin increases CSF A β 42 in normal older adults

Mean log CSF A β 42 values with SEM for younger vs older subjects during saline (white) vs insulin (black) infusions.

In vitro, insulin increases release and inhibits degradation of beta amyloid (A β 42), the peptide whose aggregation is a core neuropathologic feature of Alzheimer's disease. Watson et al. report that IV infusion of insulin acutely raised A β 42 levels in the CSF of normal humans, an effect that strengthened with age, and that was associated with memory changes. These results indicate that insulin can affect both molecules and symptoms related of AD. Deranged insulin metabolism warrants further study as a novel risk factor and potential therapeutic target of AD.

see page 1899

The accompanying editorial by Douglas Galasko notes that diabetes increases the risk of AD and this risk is highest in diabetics treated with insulin. Why? Diabetes causes vascular disease, which in turn worsens dementia; diabetes is associated with glycation of proteins, which could promote oxidative stress; there may be a link between amyloid and insulin in that IDE—insulin-degrading enzyme—also degrades soluble A β .

see page 1886

Do additional antibiotics benefit post-treatment symptoms in Lyme disease?

“Without an objective surrogate (preferably biological) marker to enable recruitment of homogenous study groups, every attempt to address clinical questions in the realm of post Lyme disease is doomed, almost per definition, to leave these questions unsettled.”

Using a randomized double-blind design, Kaplan et al. studied 129 previously treated Lyme patients who reported current symptoms, but had no other evidence of persistent infection. Additional antibiotic therapy was no more beneficial than placebo in improving neuropsychological functioning or alleviating symptoms.

see page 1916

Ceftriaxone therapy for post Lyme Syndrome (PLS) reduced fatigue but did not improve mental speed or CSF markers in a randomized double-masked placebo-controlled trial (n = 55) by Krupp et al. The frequency of serious adverse events (7%) and the nonspecific nature of fatigue do not support ceftriaxone use in PLS.

see page 1923

The accompanying editorial by Israel Steiner notes that these two studies give no evidence that post Lyme disease is an infectious process. However, the studies prove neither that the condition does not exist nor that there is no ongoing infection. There is no diagnostic test to facilitate the study of well-defined patients.

see page 1888

continued on page 1879

Monocyte protein profiles in HIV-1-related dementia

Luo et al. studied 31 Hispanic women: 21 HIV-1-infected (9 with and 12 without cognitive impairment [CI]) and 10 seronegative controls. Patient monocytes were recovered and protein profiles analyzed by Protein Chip tests. Unique phenomic profiles from cognitively impaired HIV-1-infected patients were shown, suggesting the importance of monocytes as predictors for cognitive impairment during HIV infection.

see page 1931

MuSK antibody-positive, seronegative MG

Sanders et al. found antibodies to muscle-specific receptor kinase (MuSK) in at least 40% of patients with generalized seronegative MG. The clinical presentation, EMG, and response to cholinesterase inhibitors are frequently atypical for MG. Immunotherapy is often beneficial.

see page 1978

Flexion myelopathy in Hirayama disease

Restuccia et al. studied somatosensory evoked potentials during neck flexion. They found evidence for cervical cord dysfunction during flexion in patients with Hirayama disease.

see page 1980

Stroke and air travel: Evidence for pulmonary embolism and patient foramen ovale

Thromboembolic events are increasingly recognized following prolonged air travel. Lapostolle et al. report four strokes likely due to paradoxical emboli among 65 patients with pulmonary embolus following long flights.

see page 1983

Note that this issue of *Neurology* has online material that is not in the print journal:

- **NeuroImage online only:**
Midbrain infarct with parkinsonism
J.C. Morgan and K.D. Sethi
- **NeuroImage online only:**
Extracranial hypoglossal schwannoma
A. Ranta, W.C. Winter, and I.S. Login
- **Patient Page**
A New Clue in the Mystery of Neuro-AIDS
Elyse J. Singer

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