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Major Japanese study supports cerebellar findings

A new large-scale Japanese study strongly supports earlier research suggesting that autism stems from underdevelopment of the cerebellum.

The new study, by Toshiaki Hashimoto and colleagues, is notable in two respects: it included 102 autistic subjects (and 112 controls), and it is the first to include very young subjects. Twenty-nine study subjects were under three years old, and ten of the study subjects were infants with autism "warning signs" including poor eye contact and developmental delay. (These children's diagnoses were confirmed when they were older.)

Hashimoto et al. report that cerebellar size was reduced in autistic subjects compared to controls, and that brainstem structures also were abnormally small. The differences in brainstem size, they say, were not seen in some other studies and may be due to the fact that many of their subjects were retarded.

Researcher Eric Courchesne, whose earlier studies first revealed cerebellar defects in autistic subjects, notes that Hashimoto et al.'s study also "obtained the first direct evidence that the cerebellar vermis and the brainstem are abnormal at the beginning stages of behavioral abnormality in infantile autism."

Hashimoto et al. found that the size of the cerebellum and brainstem did increase in a developmentally appropriate manner in both autistic and control groups, suggesting that "the changes...in the autistic group are not a progressive degenerative process" but rather occur early in development.

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"Development of the brainstem and cerebellum in autistic patients," Toshiaki Hashimoto, Masanobu Tayama, Kazuyosi Murakawa, Tsutomu Yoshimoto, Masahito Miyazaki, Midori Harada, and Yasuhiro Kuroda; *Journal of Autism and Developmental Disorders*, Vol. 25, No. 1, 1995, pp. 1-18. Address not listed.

—and—

"New evidence of cerebellar and brainstem hypoplasia in autistic infants, children, and adolescents: the MR imaging study by Hashimoto and colleagues," Eric Courchesne, *Journal of Autism and Developmental Disorders*, Vol. 25, No. 1, 1995, pp. 19-22. Address: Eric Courchesne, Neuropsychology Research Laboratory, Children's Hospital, 3020 Children's Way-MC5056, San Diego, CA 92123.

Surgery for Tourette's syndrome?

A variety of surgical procedures have recently been attempted in an effort to help individuals suffering from intractable cases of Tourette's syndrome (TS), a neurological disorder sometimes associated with autism. Symptoms of TS include tics such as grunting and twitching, obsessions and compulsions, attention deficit disorder, anxiety and depression, and coprolalia (uncontrollable cursing).

Current treatment for Tourette's includes Haldol or other psychotropic drugs, and behavior modification. But some individuals with Tourette's fail to respond to either treatment, and many others experience serious side effects from medications. Thus, reports of new surgical techniques to treat Tourette's have generated great interest among TS patients and their families.

Scott Rauch and colleagues caution, however, that "important unanswered questions remain regarding the scientific rationale, clinical evaluation, patient selection, safety, efficacy and ethics surrounding such surgical procedures." For one thing, they note, there is no standardized surgery for the disorder; the 36 procedures performed so far have included surgeries on the frontal lobe, limbic system, thalamus, and cerebellum, as well as several surgeries on more than one brain site. To date, they say, there is little evidence that any one of these approaches is superior to the others—or that any of them is safe. (They say, however, that there is evidence that one procedure—cingulotomy, the creation of lesions in a brain area called the gyrus cinguli—is particularly ineffective, and another—which combines cingulotomy the creation of lesions in the infrathalamic area—appears to be dangerous.)

"There is at present no substantial scientific evidence to support the effectiveness of any of these procedures in the treatment of TS," Rauch et al. say, noting that none of the published reports were designed to allow for accurate assessment of improvement or harm.

The researchers concede, however, that the risks of surgery must be weighed against the harmful effects of the drugs used to treat Tourette's, and the suffering experienced by patients whose symptoms cannot be controlled. But even in cases where surgery may be indicated, they say, guidelines should be established regarding the types of operations performed, and patients should be carefully screened to ensure that they have not been

continued on page 2

More "autistic" children now diagnosed with treatable Landau-Kleffner Syndrome

When ARRI first reported on Landau-Kleffner Syndrome (LKS) in 1991, the disorder was considered extremely rare; in fact, only about 200 cases had been reported world-wide. But as information spreads about LKS, additional cases are being reported by physicians. Still more cases are likely to come to light following a recent *Day One* feature on the disorder.

Because LKS—which is often misdiagnosed as autism—is treatable if diagnosed in its early stages, B. G. R. Neville and colleagues stress the urgency of identifying the disorder. When the seizure patterns characteristic of LKS are detected, they say, "autistic as well as language regression...far from precluding surgery, is an urgent indication for such intervention." Neville et al. recently treated two young autistic-like LKS patients with medication and surgery, and report that both improved significantly.

Landau-Kleffner syndrome usually strikes formerly normal children between the ages of three and seven, although it may also occur in children whose early development was abnormal. Children with LKS first lose their ability to understand others, and then lose their ability to speak. In some children, symptoms develop gradually; in others they literally appear overnight. In addition, symptoms may fluctuate, with periods of remission followed by deterioration.

About 70% of children with LKS have autistic-like symptoms. These include aggression, failure to make eye contact, insensitivity to pain, resistance to change, "flat" voice patterns, problems with gross or fine motor skills, unusual gait, lack of speech, rituals, habits such as licking or smelling food before eating it, hyperactivity, and irregular sleeping patterns. Like autistic in-

continued on page 2