

Autism and CMI

While in Rome, enjoying La Dolce Vita, I noticed a string of messages about autism and CMI on this site (I know; like you I am a message board addict). Because of the little amount of information out there about this topic, I felt compelled to write this quick post for your consumption.

CMI has an effect on intellectual and emotional performance.

Everybody here at knows about the "brain fog", which is the inability to focus, multitask, and effectively retain short term memory information. Two theories behind this problem. Either the high CSF pressure caused by CMI "intoxicates" the thinking part of brain (i.e. the cerebellar hemispheres, which are far away from the posterior fossa), or the CMI interferes with the cerebellar function of traffic controlling (imagine the effects of a drunk air traffic controller in charge of the incoming and outgoing flights at a major airport...). "Brain fog" is an intellectual thing.

The emotional disturbances of CMI are a less known entity. ADD (attention deficit disorder) and ADHD (attention deficit and hyperactivity disorder) are very common in CMI. In many patients they are caused by CMI (= they disappear after surgery), in others are aggravated by CMI (= they improve after surgery). ADHD tends to be more common in CMI children.

Depression is a "side effect" of CMI. Your CMI is acting up. your symptoms are interfering with your activities, your life becomes a mess, and as a consequence you become depressed (if you are happy after all that, there is something wrong with you).

Autism is a more complicated problem. Autism is not caused by CMI, but symptomatic CMI can significantly aggravate autistic patients. At this point:

I have to elaborate a bit.

1. CMI is asymptomatic in several individuals;
2. when it becomes symptomatic, CMI stops being a curious anatomical variant (like Dumbo ears, or my nose), and becomes a medical problem, interfering with your quality of life;
3. occipital pressure headache is the most common symptom in CMI patients who reach medical attention.
4. if you were a normal non-CMI person, and you had a strong headache, you would be obviously cranky;
5. autistic children cannot tell you how they feel, since they are blocked inside their own world;
6. if they are sick (flu, pneumonia, or else) or stressed, autistic children can have temporary worsening of their autistic symptoms;
7. CMI headaches can aggravate autistic symptoms, in the same way;
8. since we cannot ask autistic children if they are experiencing an occipital pressure headache, specialists rely on the detection of the "headache behaviour" (if the child holds his head, bangs his head, hits his head, or stops doing his/her activities and isolates in a corner, exactly like a sick cat would do);
9. if "headache behaviour" is present, the child has a very good shot at a clinical improvement of the autistic symptoms, after the surgical

correction of the CMI. That said, a very few neurologists, neurosurgeons, and CMI specialist are aware of this problem. The vast majority of neuro specialists will disregard the issue, on the grounds of the assumption that the CMI does not cause autism.

We have treated a pretty large number of autistic/CMI children at TCI, with results that surprised us. The only other neurosurgical group with experience in this field (that we know of, and CMI is a little world after all) are the pediartic neurosurgeons from Columbia University in NY; their numbers are smaller, the results comparable.

OK. The deed is done. Now I can go back strolling in the Roman streets, eating gelati's, and sipping espressos.

More on this topic by Dr. Bolognese / July 2004

Chiari is frequently associated to ADHD and ADD. It is the old problem of the chicken and the egg: in some cases the Chiari symptoms make the ADHD/ADD worse, in others the Chiari is the cause of the ADHD/ADD. In the latter instance, we had children going from the bottom to the top of their class, after surgery. Still, the majority of the ADHD/ADD cases out there is primary (= no cause is identifiable).

In the several hundreds of patients seen at TCI so far, we also saw a few patients with autism and PDD (a behavioural disorder close to autism); just one of them improved significantly after surgery, raising the suspicion that in his case the PDD was secondary to Chiari.

Paolo Bolognese, M.D. June 26, 2005

Can Chiari Cause Death

There are no official numbers about mortality in CMI patients. The main reason is that most of the doctors see just small numbers of these patients. The most recurrent pattern in Chiari deaths is the association of severe

sleep apnea with extremely high doses of opiates (pain medications). The tolerance for the opiates leads these patients to enormous doses of these drugs, with a narrow margin between therapeutic effect and respiratory depression. (translated in English, there is a small difference between the dose that helps you and the dose that decreases your breathing). The drug-induced respiratory depression associated with sleep apnea is a dangerous combination, and can lead to respiratory arrest. Practically, it is a death by drug overdose in patients with decreased respiratory drive. Seeing from the other angle, it is not the Chiari that kills you, but the circumstances around it.

As a broad statement, and on the grounds of our large database, death due to Chiari is a rare instance.

Dr. P Bolognese