



CHILDHOOD EPILEPSY

More than 300,000 children in the U.S. under the age of 15 have childhood epilepsy; more than 90,000 of them have seizures that cannot be adequately treated.

Obviously, with childhood epilepsy there are abnormalities in brain structure and physiology. These carry over to problems in cognition and behavior which can be seen at, or near the time of diagnosis. In fact, behavioral problems may be present in advance of the first seizure.

In my practice, I saw a girl who filled her purse with rocks to swing at people. She was being seen to determine the supposedly emotional basis for her sudden aggressive behavior. An unusual pattern of results on neuropsychological testing suggested seizure activity. With a referral to neurology and an EEG, this was confirmed, even though she had not yet had an overt seizure.

There are also problems in cognition associated with physiological issues. Even compared to siblings, children with seizure disorders have problems with language, verbal memory, reading and writing. Their differences also show up in their ability to process information at a reasonable pace and to achieve with math. Overall, most

family variables do not play a role in this, except with high parental anxiety, particularly impacting some achievement and writing ability. Otherwise, we're mainly looking at the impact of physiology on cognitive function and academic achievement.

Successful treatment and management sometimes improves memory and logical thinking, but some deficits remain that need to be measured and addressed. Successful control of seizures still leaves lingering cognitive problems to be addressed neuropsychologically.

There may even be a physiological basis for some behavioral difficulties in areas that mediate social cognition, and thus social behavior appears to be affected. Some studies suggest that early temperament issues in these children (internalizing or externalizing behavioral problems) are associated with executive functioning. These problems can be seen three years following seizure onset, highlighting the enduring nature of cognitive and behavioral problems. These behavioral problems extend beyond what would simply be seen in chronic illness, which speaks to the physiological basis of cognitive and behavioral issues associated with childhood epilepsy.

BAY AREA CHILD ASSESSMENT CLINIC

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NEUROPSYCH UPDATE

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SPRING 2013 DEVELOPMENTAL DISORDERS

AUTISM SPECTRUM DISORDER/ASPERGER'S SYNDROME

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WELCOME TO THE SPRING 2013 EDITION OF NEUROPSYCH UPDATE FOCUSING ON DEVELOPMENTAL DISORDERS.



According to the National Center on Birth Defects and Developmental Disorders, more than 500,000 children are diagnosed with developmental disorders every year. Whether these conditions involve language, learning, or psychiatric impairments, it is critical to obtain early diagnoses and treatments to achieve the best possible outcomes. Our overriding goal is always to minimize the impact of these conditions, and to help children reach their full potential.

Some of the more commonly occurring developmental challenges are Autism Spectrum Disorder, Mental Retardation and Asperger's Syndrome. Others, such as Fragile X are, fortunately, very rare. Theories on the causes of some of these disorders range from environmental to genetic, or a combination of both, with recent research also

pointing to childhood stress as influencing some conditions. In this issue, we will examine the assessment and treatment of these disorders, details relevant to some disorders with very specific presentations, and overlaps occurring in the more esoteric conditions.

We will also consider other long-term conditions that impact children, such as chronic illness and childhood cancers, which ultimately become developmental issues as they affect cognitive and emotional development, though they are not necessarily genetic or neurodevelopmental.

We will look at the role of the neuropsychologist in supporting children with developmental disorders, such as documenting the extent of their problems and the need for special services in school, assessing whether treatment and services are adequate, recommending appropriate academic and instructional levels, and providing a second opinion for effective interventions.

I hope that Neuropsych Update supports your professional expertise, and I invite you to contact me for further discussion or questions that arise.

Sincerely,

Howard J. Friedman, Ph.D., ABPP

AUTISM SPECTRUM DISORDER/ASPERGER'S SYNDROME

Autism Spectrum Disorder is well known to us, and often the symptomatology makes it readily apparent. Thus, I am focusing on Asperger's Syndrome, a more equivocal diagnosis. Children with Asperger's do not have the same language difficulties as those with autism; their issues are more subtle and related to social interactions and repetitive behavior.

I often see a tendency to over-speculate about the presence of Asperger's Syndrome based on social skill problems. In one ludicrous example, I've seen a psychologist suggest that Asperger's might be present in a 70 year-old who was once professionally active with the public, but didn't want to be home with his wife. Ultimately, a bad marriage doesn't imply an Asperger's diagnosis!

To a lesser degree, I will sometimes see children who have various relational problems that can be present for a variety of reasons. They may withdraw if they are getting bullied, or if they have generalized anxiety or learning disabilities – especially related to math. It's important to understand that there is an overlap between non-verbal learning disabilities and an Asperger's-like presentation, because patients with non-verbal learning disabilities have difficulty picking up social cues, such as tone of voice and facial expressions.

Unfortunately, I often see professionals who are quick to label social skill problems as Asperger's, rather than examining patients for differential diagnostic possibilities. In recent years, Asperger's has become the "hot" diagnosis; thus, professionals may jump to conclusions. Obviously, treatments differ significantly based on the diagnosis. Schools and tutors can address learning disabilities, whereas Asperger's may require a different approach, such as social skills training. In addition, parents would have very different expectations of their child's potential, depending upon the diagnosis.

MENTAL RETARDATION

We are all familiar with the major criteria for mental retardation: a generalized disorder appearing before adulthood, characterized by significantly impaired cognitive functioning and deficits in two or more adaptive behaviors. Historically, it has been defined as an IQ score under 70. Once focused almost entirely on cognition, mental retardation now includes components related to mental functioning and functional skills in one's environment.

Many children at this level of functioning receive adequate evaluations in school about their intellectual levels. Many, but not all children, for example, some ethnic groups, have restrictions on the amount of testing that can be done.

One component schools may not necessarily accomplish well is the other critical criteria needed to make an effective diagnosis: functional capacity/ability. There are specific tests and standards with which to evaluate these areas, and schools may or may not use them. The designation of mental retardation becomes critical in terms of future access to important services.

In my practice, I sometimes see people who may qualify for specific services in schools based on autism, but there has been no examination to determine whether they qualify for a degree of mental retardation which would open up another avenue of service, and also indicate the need for specific support.

This would suggest that when some of the other conditions we'll discover are present, we might also consider the feasibility of looking at the whole picture. It's important to examine for a dual diagnosis, even when initial testing results in one developmental disorder.

CHILDHOOD CANCER

Childhood cancers are obviously complex from a medical point of view, but also present challenges from a psychological and neuropsychological perspective. Different types of cancer present different psychological concerns, and at a minimum, we are dealing with chronic illnesses that reverberate throughout the family structure.

Some childhood cancer treatments have direct implications for brain development and functioning, as well as neuropsychological abilities. Pediatricians may follow up on behavioral/cognitive issues, understanding that a delay in appropriate treatment can result in negative consequences. I was consulted in the case of a patient with

childhood leukemia, which is the most prevalent non-central nervous system cancer. She might have responded readily to a bone marrow transplant, but the ideal donor – who was available – was inaccurately identified. Thus, the patient endured a lengthy period of other treatments, such as chemotherapy, which ended up extending the impact of the leukemia. The bone marrow donor was eventually identified and she received that intervention, but the earlier treatment resulted in significant cognitive problems that persisted.

Central nervous system cancers in children increased from 11.5 per 100,000 to 14.8 per 100,000 from 1975-2004, while the mortality rates declined due to treatment advances. However, better survival rates are accompanied by neurocognitive problems that persist and are cause for concern. Some surveys show that as many as 25% of all pediatric brain tumors are medulloblastomas. Treatment of any cancers can involve surgery, radiation, and/or chemotherapy. Obviously, a CNS tumor involves radiation directed to specific areas of the brain. Both CNS and non-CNS cancers have been found to impact long-term intellectual functioning which persists long after treatment ends. There is a relationship between intellectual decline and younger age of cancer/treatment onset, higher radiation dosage, and the type of cancer. For example, girls with leukemia were found to have decreased intellectual functioning, but with medulloblastomas, they have a more specific decline in verbal IQ. One study found that there is a continual decline of two to four IQ points per year that continues at least four years after treatment has ended. This suggests an impact on neural development that creates an increasing gap over time. In fact, one study found evidence of neurocognitive impairment continuing into adulthood, to the point of impacting socioeconomic achievement.

Older pediatric cancer patients an average of 11 years of age at onset may maintain their intellectual ability for a while, but then experience a gradual decline. In recent years, there has been an increase in the examination of specific neuropsychological effects as residual problems emerge in child cancer survivors. Problems include attention, processing speed, memory, learning, and language. Some of the deficits predicted lower academic performance, particularly in math and reading. Even with non-CNS cancers, such as leukemia, long term effects on language development and working memory have been found.

The survival rate of various cancers has increased by 80% in the past 40 years. Consequently, parents need help in recognizing the long-term residual issues, and may need assistance to ensure that the school system provides appropriate services for their children. Schools base students' need most immediately on a child's potential using IQ. When the IQ has suffered from illness and treatment, we need to look much more comprehensively at these children so they can receive vital services.