Marinesco Sjogren Syndrome

NEWS

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About the Newsletter

Highlights of this newsletter include an overview of gonadal function in Marinesco-Sjogren Syndrome (MSS), an introduction to the Lau family from Hawaii, and ideas for improving finger and hand strength.

Suggestions for improving the newsletter and ideas for articles are welcome. Feel free to distribute the newsletter by email or to print copies for interested individuals. Email us if you wish to be added to or removed from the newsletter mailing list. Current and back issues of the newsletter are also available at the website on the publications page.
http://www.marinesco-sjogren.org/pubs.html

A message from William Wilcox, M.D., Ph.D.
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In this issue, Dr. Brasel discusses the common finding of pubertal delay in the Marinesco-Sjogren Syndrome. There are no known genes for gonadal function in the region containing the as of yet undiscovered MSS gene. I suspect it is part and parcel of the condition. The bony problems the Lau children had are fortunately not very common in MSS. Glaucoma is always a risk after cataract surgery. All children with MSS should be followed by a good ophthalmologist.

Gonadal Function In Marinesco-Sjogren Syndrome

by
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Normal function of the gonads, that is, the ovary and the testicle, is necessary for fertility and for the development of secondary sexual characteristics at the time of adolescence. Their hormone secretions, estrogens in females and androgens in males,

are also responsible for cessation of skeletal growth (bony fusion) and maintenance of bone mass in adulthood. Diminished function, called hypogonadism, occurs in two forms: In one, the gonads themselves are impaired and in the other, the hormones called the gonadotropins, which control the gonads, are deficient. The second form is called hypogonadotropic hypogonadism. In the first form the gonadotropins are elevated, attempting to stimulate the impaired gonads, and it is called hypergonadotropic hypogonadism.

A number of papers in the medical literature have appeared and are listed in PubMed [1] for your interest. Since 1965 four papers by the same group of authors are cited in the English literature regarding the association of the first form, hypergonadotropic hypogonadism, with Marinesco-Sjogren Syndrome [2,3,4,5]. Not all persons with this Syndrome show this associated condition, but many do. It is felt that the genes for the two conditions are linked, that is, they are located near one another on the same chromosome, and are inherited together in many instances.

What does it mean if my child has inherited this form of hypergonadotropic hypogonadism? The information above tells you that, doesn't it? The diminished to absent production of the sex hormones means puberty will be delayed and probably absent entirely. The person will be infertile. Bone mass will be diminished. It is diagnosed by finding low estrogen in females or low androgens in males, accompanied by elevated gonadotropins, after the usual age of puberty. There are hormone preparations available to bring about pubertal changes, including menstruation, but the infertility cannot be reversed by current techniques. Since poor growth and short stature also occur in the Syndrome, a delay in puberty, a longer growing period and delayed bony fusion is not such a bad thing.

But what about diminished bone mass as a result of the sex hormone deficiencies? Diminished bone mass, that is, osteoporosis, is of great concern in this population. The positive effect of muscle action and weight bearing on the skeleton are often markedly reduced in the Syndrome. The lack of the positive effects of sex hormones on the skeleton compounds the problem. The muscle weakness with or without poor balance (ataxia) in the condition makes for frequent falls and the low bone mass makes for increased fracture risk.

What should I do to ameliorate the effects of the hypogonadism in my child? A decision to treat with sex hormones and, if yes, at what age should be discussed with your child's physician. Social maturity and/or a concept of being different need to be considered, along with the benefits of delaying bony fusion on final height in any decision about the use of hormones. When using hormone therapy to bring about puberty, most physicians recommend beginning at low doses and working them up slowly over months and perhaps more than a year to normal adult replacement doses. Remember puberty does not occur overnight under normal circumstances. Thank goodness!!

Other means of optimizing bone mass should begin as soon as the diagnosis of Marinesco-Sjogren Syndrome is made and continued thereafter. Physical therapy to improve locomotion and weight bearing will surely be provided for all patients. Be committed to persevere with this, even though the child may become disinterested. Any gain AND/OR failure to lose function will be beneficial in maintaining bone mass and in reducing fracture risk.

Do not forget diet!! The skeleton requires adequate amounts of calcium and Vitamin D

for bone growth in the child and for the continual bony turnover that occurs throughout life. Be sure your child receives adequate amounts of calcium. The equivalent of a quart of fortified milk a day is recommend for children. It will contain 400 IU of Vitamin D and adequate calcium. Milk, ice cream, yoghurt and cheese are all good sources of calcium. If your child is a picky eater or is intolerant to milk and milk products, then discuss supplementation with the physician or a dietician. But BEWARE! Do not decide to give excessive amounts of Vitamin D; it can accumulate in body tissues and become very toxic. In this case, more is definitely not better.

In summary, many persons with Marinesco-Sjogren will show diminished gonadal function. Many, but not all, of the effects of the gonadal impairment can be treated with hormone replacement. When and how rapidly to advance to adult doses should be determined with the advice of your physician. Low bone mass is of particular concern which results from a combination of the deleterious effects of muscle weakness, decreased weight bearing and the decreased sex hormone secretion. Attention to this problem should begin as soon as the Syndrome is diagnosed in all patients, even if hypogonadism does not develop.

1. PubMed, a service of the National Library of Medicine, provides access to over 12 million MEDLINE citations back to the mid-1960's and additional life science journals. PubMed includes links to many sites providing full text articles and other related resources. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi

2. Skre H, Berg K. Linkage studies on Marinesco-Sjogren syndrome and hypergonadotropic hypogonadism. Clin Genet 1977 Jan;11(1):57-66.

3. Skre H, Bassoe HH, Berg K, Frovig AG. Cerebellar ataxia and hypergonadotropic hypogonadism in two kindreds. Chance concurrence, pleiotropism or linkage? Clin Genet 1976 Feb;9(2):234-44.

4. Berg K, Skre H. Possible linkage between the Marinesco-Sjogren syndrome and hypergonadotropic hypogonadism. Birth Defects Orig Artic Ser 1976;12(7):271-4. PMID: 1024623

5. Berg K, Skre H. Possible linkage between the Marinesco-Sjogren syndrome and hypergonadotropic hypogonadism. Cytogenet Cell Genet 1976;16(1-5):271-4. PMID: 975888

Family News: Aloha from the Lau Family!

Aloha from the Lau family in Hawaii. Dad, that's me, Norrin. JoAnn is the mom, Tammy is the oldest child at 23 and Isaac is 21. A brief summary about us:

We noticed Tammy's cloudy eyes when she was 3 months old. She had her cataract surgeries, and now we continue to monitor her eye pressure lest she loses her sight (due

to glaucoma). We put in eye drops several times a day.

When Tammy was young, she could walk by holding on to things (tables, furniture). Then she got a high fever when she was 1 1/2 years old, and all her motor skills were "lost". She couldn't even sit up by herself. What seemed like forever, we got her to the walker, and then to forearm crutches. But then her condition affected the bone growth of her knee joints. It made her knee joints crooked, so we did not feel comfortable about her safety. She is now in a wheelchair. We wish that we had stopped the growth in the bones when they started getting crooked. (That way they could still support her weight.) When she's at home, she crawls on her hands and knees.

Tammy was diagnosed as mildly retarded. She likes to swim, work on the computer, do water painting, read (she reads the Harry Potter books), speak Spanish with her friends (we are Chinese), and is getting increasingly hungry for her independence. She recently received a hand bicycle to ride around the neighborhood.

Tammy graduated from High School with mostly special education classes. She took only a couple of classes at the nearby Community College. Now our task is to find her something to do. She was filing at Dad's office once a week but she didn't like working for her Dad. Now she has a part-time job at the Honolulu Zoo Gift Shop renting out strollers and helping in the store a few hours each week.

Isaac also had his cataracts removed as an infant and also has glaucoma in his right eye. We have to monitor his eye pressure carefully and put eye drops in twice a day. He never had a violent illness like his sister, but he also has slurred speech and a hard time writing. When Isaac gets hit with a high fever (+104), he has convulsions. This happened twice, so when his fever is high, it throws us into our panic mode.

Before Isaac's legs got too crooked, we tried to straighten his right leg (osteotomy: take a wedge out of the bone) through Shriner's. It did not work and his leg atrophied, so he does not have much feeling below his right knee. This was really tragic for us because he was on a walker until this happened. They said the leg atrophied because the cells did not release "whatever cells release whenever extra energy is needed". Later he had another operation on his left knee to stop the bone growth and stop the leg from getting crooked.

Isaac's motor skills are impaired (talking, writing, walking) but he is gifted in the area of languages. He is most fluent in Japanese, followed by Mandarin (Chinese), then Korean and is currently studying American Sign Language. He has a real outgoing personality. When at the Community College, he only takes one or two classes. He is currently doing volunteer work for our church (Church of Jesus Christ of Latter-Day Saints).

JoAnn is a massage therapist, teaches piano, hula, and is into healthy food and "essential oils". She is currently singing in the church choir and performs in a yearly Christmas concert for the community.

Norrin is an insurance agent, financial planner, a high school tennis coach, and loves to be lazy around the house.

Email the Lau family
See more Lau family pictures on the website.

Ideas for Improving Finger and Hand Strength

Here are some goods ways for increasing finger and hand strength that may help

improve activities of daily life and support handwriting development. Thanks to Chrissy Kaichi for sharing several fun ideas!

- Squeeze clothespins onto the edge of a bucket. Decorate the clothespins with the child's favorite theme to make the activity more fun.
- Color with small, broken crayons to encourage proper grip.
- Insert small pegs into a pegboard.
- Pick up small objects with tweezers or tongs.
- Play with play dough or clay.
- Cut with scissors through heavyweight paper.
- Play with squeezeballs.
- Pick up coins and put in a piggy bank – great for practicing money skills, too!
- Connect interlocking links or pop beads
- Play with toys like Lego for both strength and manipulative ability.
- Look for small hidden objects (beans, beads, pennies) in therapy putty or silly putty.
- Play games like "Operation" or "Bed Bugs".
- Tennis ball "monsters". Cut a line in a tennis ball to make the monster's mouth, and draw a face. Have the child squeeze the sides of the mouth and "feed" the monster coins or other small objects with the opposite hand.

Journal Articles Available

The support group can provide MSS medical journal articles to families for personal educational use. Contact our librarian ckaichi@yahoo.com to obtain a list of available articles. Note that some articles are rather old, diagnosis is often not clear-cut, and there may be significant variation between patients with the same diagnosis. Journal articles can also be obtained from medical school libraries and ordered through some local libraries. The Online Mendelian Inheritance in Man (OMIM) is also a good source of information about MSS and other genetic disorders.

Upcoming Conferences

Here on some upcoming conferences on special education, technology for the disabled, and genetics.

Fifth Annual Conference of the Council of Parent, Attorneys, and Advocates (COPAA), a national organization of parents of special education students and their advocates and lawyers, Hyatt Orlando, Kissimmee, Florida March 13-16, 2003. http://www.copaa.net/FifthConference.html

"Technology and Persons with Disabilities," Presented by The Center on Disabilities at California State University Northridge, March 17-22, 2003, Los Angeles Airport Hilton and Marriott Hotels. Free passes to exhibits only. http://www.csun.edu/cod

"Genetics of Rare Disorders – Window to Common Disorders," Sponsored by the National Disease Research Interchange (NDRI) and the National Institutes of Health (NIH), March 25, 2003, Renaissance Mayflower Hotel, Washington, D.C. http://www.ndri2003.comed.com