CHARLOTTE EYE
EAR NOSE & THROAT
ASSOCIATES, P.A.
Established 1923

October 14, 1999

Edward Spence, M.D.
CMC – Genetics
P.O. Box 32861
Charlotte, NC 28232

RE: WULF, MATTHEW A.
DOB: 12/3/97

Dear Ed:

Thank you for asking me to see Matthew Wulf, 22-month-old white male with infantile Refsum's disorder (IRD). Matthew was born the product of a full-term uncomplicated pregnancy by normal vaginal delivery with birth weight 5 pounds, 9 ounces. Matthew's older brother, now twenty years old was diagnosed with infantile Refsum's disease at age five, developed nystagmus at a very early age and had abnormal ERG when first done at age five. Matthew developed failure to thrive soon after birth and was evaluated for IRD at Oregon Health Sciences Center. His problems have included partial deafness, hypotonia, liver disease, steatorrhea, possible abnormal joint calcification according to his mother. Evaluation of Matthew at age four months by Dr. Robert Steiner revealed deficiency of essential fatty acids including DHA and arachidonic acid. Apparently an MRI scan may have demonstrated evidence of delayed demyelination which is typical for the disorder. An ERG was abnormal. He was soon seen by Dr. Manuella Martinez in Barcelona, Spain, who is one of the world's experts on this disorder and began him on DHA-EE supplementation as part of his treatment. He has been monitored carefully at NOHSU. He also was seen by Dr. Richard Weleber, Professor of Ophthalmology and Molecular and Medical Genetics at OHSU who has published on IRD in the English literature. Initially there was some poor response to visual targets with normal refraction. He had poor pupillary responses to light, normal refraction, mild optic nerves appeared pink, retinal vessels were slightly narrowed. There were no foveal reflexes but no gross abnormalities were noted. Peripheral fundus was lightly pigmented. The ERG again demonstrated subnormal responses for rod and cones, typical for peroxisomal biogenesis. He also had an evaluation of functional visual assessment at age seven months which showed reasonably good visual performance.

His parents have now moved to the Charlotte area and they have been seen by Dr. Matern, Department of Genetics at Duke University and also by yourself.

His parents feel he will follow and track objects held relatively close to him and large objects such as a ball held anywhere from six to twenty feet from him. Previously they did notice some hand-waving or he would move his hands in front of lights placed in front of him but this behavior is noted less frequently. They find he can follow most objects but sometimes will lose them if they move to quickly. At times they have noted a slight outward drift of his eyes. Although hearing was apparently diminished 80-90%, he does hear better with hearing aids which he obtained at age five months and sometimes will use his hearing in locating objects. They feel his functional vision is reasonably good at home.

Mom reports that an MRI at age six months showed myelination typical of a one month old at sixteen months of age, typical of a twelve month old. Again, he has been on DHA-EE since age five months. He is now seen for further evaluation.

Medicines: DHHA-EE 300 mg q day, vitamin K multivitamins. His brother now approximately age 20 apparently also had an intracranial bleed soon after birth that has not been present in Matthew.

EXAM:
Vision: Central, steady, maintained fixation to small toys, lighted finger puppets, my face. He tracks both horizontally and vertically, somewhat diagonally. His peripheral fields appear full when toys are presented in a different field of gaze he does refix. Objects could be moved at relatively rapid pace and he would still be able to follow them or locate them.
Cycloplegic refraction: +3.50 OU.

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Optokinetic Response: Normal. Horizontally 1-2+, vertically 2+.
Pupillary responses: 2.5 mm, 2+ reactive, No Marcus-Gunn.
Ocular Motility: No nystagmus. He appears grossly orthotropic to Hirschberg light reflex testing and to brief cover test.
Hand-held Slit Lamp Exam: Conjunctiva quiet, cornea clear, A/C quiet. Iris normal. Lens clear.
Dilated Fundus Exam: Cup-to-disc is 0.0. I feel there is mild 1+ optic nerve pallor bilaterally. There is no disc edema, the central area may be minimally elevated compared to the periphery. There is arteriolar narrowing noted bilaterally. There is a decreased macular "umbo" reflex. There is no gross macular RPE disturbance. Posterior pole pigmentation is relatively normal. Peripheral pigmentation of the fundus is blind, there is no pigment clumping typical of RP noted.
Tactile Tension: Normal.

IMPRESSION:

1. Infantile Refsum's disorder (disease). Apparently Matthew has definitely had abnormal ERG's on two occasions in the past. He has had definitive testing; two well-known genetic evaluations to confirm his diagnosis. He is undergoing DHA treatment. His functional visual acuity appears to be relatively good at this point despite abnormal ERG. The newest finding I see is that he appears to have some optic atrophy which was not noted previously and he has definite arteriolar narrowing. Previously noted decreased macular reflex was also noted today. There still is no typical pigment clumping seen in retinitis pigmentosa light disorders. Another good sign is that he has not developed nystagmus which is often indicative of poor vision in infancy and was apparently present in his brother as well. At this time, I see no marked diminution of vision but he may need to be considered for the Governor Morehead Preschool Vision Intervention Program perhaps for an initial assessment and followup as indicated by the staff there. Hopefully the DHA treatment will help prevent the typical progressive retinal changes often seen in IRD.
2. Possible mild optic atrophy. Mild arteriolar narrowing.
3. History of occasional intermittent exotropia by parent's observation. His eyes appear well-aligned today.

Thanks for asking me to help in the care of this interesting young man and I would recommend followup here in six months.

Warmest regards,

Jm

Timothy G. Saunders, M.D.

TGS:jh

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Mr. + Mrs. Wulf