Canadian Association of Neuropathologists
L'Association Canadienne des Neuropathologistes

CASE No 5

C.E. Hawkins[1], J. Vajsar[2], G. Yoon[3] and W. Halliday[1]

[1]Divisions of Pathology, [2]Neurology and [3]Genetics, The Hospital for Sick Children, Toronto

This boy was born at term by C-section, for breech presentation and previous C-section, to a 34 year-old G4P2A1 mother. A previous half-sibling died at 3 months of age with Cornelia de Lange syndrome and he has a healthy half-brother. He had poor respiratory efforts and a weak cry and was intubated at 1 hour of age. On neurologic exam he did not open his eyes spontaneously, had decreased tone, no movements against gravity, no DTRs, no grasp, Moro or suck reflexes but pupils were reactive and he had a gag reflex. He had contractures of the right hip joint, flexion deformity of the left foot, and tongue fasciculations. Brain MRI revealed mild prominence of the CSF spaces but was otherwise normal. MRS was normal. EMG revealed a myopathic pattern with small muscle action potentials. Nerve conduction studies were normal. A karyotype, subtelomeric FISH, plasma amino acids, urine organic acids, lactate and carnitine were all normal. CK was 34. Molecular genetic testing for FKRP and SMA were negative. A muscle biopsy was performed and revealed a non-specific myopathy with muscle fibre hypotrophy (type I > type II) but no fibre-type grouping. There were no ragged red fibres or rod-like inclusions and no COX-negative fibres. The muscle cells were immunopositive for merosin and collagen VI. He was discharged to a long-term care facility.

At the age of 5 years he continued to be severely hypotonic and profoundly weak with mild global developmental delay. He attends school and recognizes letters, numbers and colours. He has a GJ-tube in place for feeding and a tracheostomy for respiratory support. On examination he was hypotonic with generalized muscle atrophy. He had bilateral ptosis but no abnormalities of extra-ocular movements. He had moderate scoliosis, a high arched palate, long palpebral fissures and a flat nasal bridge. Muscle strength was graded as MRC 2/5 in the upper and 1/5 in the lower extremities. DTRs continued to be absent. EMG continued to show myopathic changes and a repeat muscle biopsy was performed.

Materials submitted: One representative H&E slide

Question: Diagnosis?