

the nature of elastic bands to assist in overcoming the hypotonia. He claims that this renders the education easier and adds greatly to the patient's comfort; in fact, he states that in some cases the only bar to locomotion is the hypotonia. These patients are not in reality so ataxic as they are hypotonic. In that connection, Dr. Williams mentioned another case described by the physician of another institution, on the border of Switzerland, in which he showed the remarkable results obtained by spontaneous efforts at the education on the part of the patient, that is to say, the patient on being encouraged to get out of bed makes a few faltering steps to the next bed and so educates himself. Dr. Williams, however, believes that it is a very important matter to insist upon the supervision of these exercises by a medical man. He thinks it is too commonly left to the attendants, who are not always educated in the necessary precautions to carry out the exercises and use too much vigor possibly.

ACQUIRED SPASTICITY AND ATHETOSIS

By William G. Spiller, M.D.

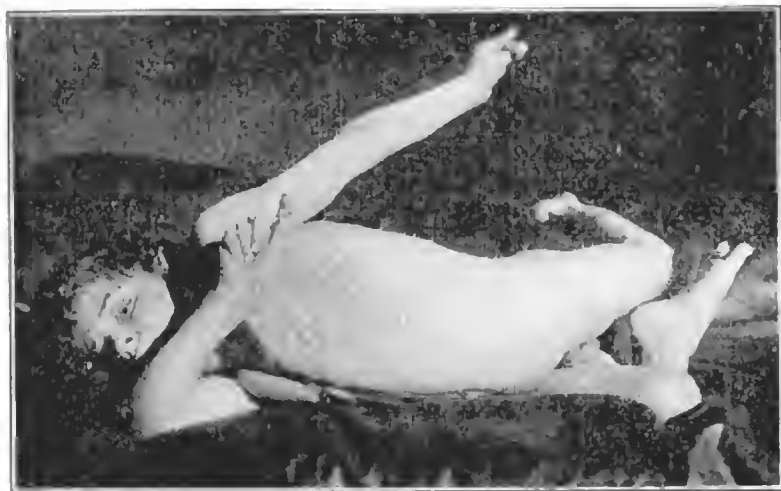
Haupt¹ remarks that idiopathic or primary athetosis is relatively rare. Lewandowsky distinguishes between acquired athetosis and similar forms developing after hemiplegia. The former is not merely a post-hemiplegic athetosis affecting both sides, or a result of infantile spastic diplegia, but is an independent peculiar disease, whose pathology is not definitely known, but probably consists of bilateral cerebral lesions. Oppenheim also makes the distinction. Previous diplegic disturbances should be excluded if the term primary double idiopathic athetosis is employed. In a case reported by Haupt small cortical foci were found in the left parietal lobe, and seemed to indicate a previous encephalitis. A few cases with necropsy in the literature are referred to by him.

Dr. Spiller presented a patient, a boy twelve years old, in whom during the past five years he had observed gradually developing spasticity of all the limbs with athetosis, reaching finally such an intensity that the patient was confined to his chair. The patient first came under Dr. Spiller's observation December 15, 1902. At that time he was seven years old. He has been under Dr. Spiller's care at intervals since 1902. The following history was obtained in 1902. He was the first born child. The birth was easy and normal. He was said to have had convulsions when four months old. The father stated that the boy walked, ran and jumped as other children until four months previously, but since that time had gradually been getting lame in the left lower limb, and had been obliged to wear a brace during the previous four weeks. He had not had any pain but occasionally had some tremor of the upper and lower limbs.

An examination showed that the boy was unable to stand without supporting himself by bending back the knee. When he attempted to walk the feet were wide apart, the knees were close together and the lower limbs became spastic. There was no spasticity of the limbs when the boy was at rest. The lower limbs were somewhat weak when he was walking, but very little if at all when he was sitting. The grip was good in each hand, and the voluntary power of both upper limbs was good. The patellar reflexes were prompt but there was no clonus. The plantar and Achilles reflexes were normal. When lying down the lower limbs showed no spasticity on voluntary movement. Sensations to touch and pain were normal. Each thigh could be moved passively freely. What weakness was present

¹ *Deutsche Zeitschrift für Nervenheilkunde*, Vol. 33, Nos. 5 and 6, p. 464.

seemed to be in the extensor muscles of the back and hip. Electrical reactions in the lower limbs were normal, but in August, 1903, a quantitative decrease was observed. Scoliosis was present when the boy was standing. The calf muscles were not enlarged.



Photographs made by Dr. A. R. Allen in 1908, with very rapid exposure, showing the extreme spasticity of the limbs.

At that time the diagnosis was very difficult; by some the condition was regarded as muscular dystrophy, a diagnosis which Dr. Spiller never accepted, and the variability in the gait from time to time suggested a hysterical element.

The notes of an examination made by Dr. Spiller January 13, 1908, are as follows: The lower limbs are very spastic but at times this spasm yields, so that the limbs can be moved at most of the joints quite freely, though not to the full extent. The right lower limb is usually kept extended, with the foot in equino-varus position. The varus position can be overcome, but the contraction of the Achilles tendon is so great that the foot cannot be flexed at a right angle with the leg. The big toe is hyperextended. The left lower limb is partially contracted in flexion at the knee, and the left foot is extended to the full degree with slight tendency to varus position. The varus deformity is not so intense as in the right foot. The contracture of the Achilles tendon here also is so great that the foot cannot be flexed at a right angle with the leg. The lower limbs are not distinctly wasted, but are poorly developed on account of disuse. The boy usually lies with the left leg flexed on the left thigh, lying upon the leg. When he is entirely at rest voluntary jerkings occur only occasionally. But any passive or voluntary movement causes involuntary jerkings of portions of the upper and lower limbs resembling athetosis, seen especially in the lower limbs in the right big toe which is slowly and repeatedly hyper-extended, very much as in athetosis. The spasms of the lower limbs are increased by passive movements. The patellar tendon reflex is exaggerated on the right side and probably also on the left. The spasm of the muscles prevents the movements of the legs. The Achilles tendon reflexes are probably exaggerated, though the full degree of the exaggeration cannot be determined. The Babinski sign is very distinct on each side, more so on the right. Ankle clonus is impossible because of contracture of the calf muscles. He moves the right lower limb in toes, knee and hip, but with much diminished power, and he has no movement at either ankle. The movements of the left lower limb are preserved in the toes and at the knee. The movements of the knee consist of slight flexion and extension. He has no voluntary movement of the left hip.

Touch, pain and temperature (heat and cold) sensations are normal in all parts of the body. The trunk is greatly deformed. When the shoulders are placed fairly on the bed the body is so distorted that the boy lies on the right hip with the left hip elevated. The scoliosis is extreme with the concavity towards the left in the lumbar region.

The right upper limb is moved at all parts and at all joints, but with much diminished power. There is spasticity of the upper limbs and all movements are exceedingly incoördinate with increased spasm on movement, resembling athetosis. There is no contracture in either limb. The limbs are not muscular but are not atrophied. The biceps and triceps tendon reflexes cannot be determined on either side because of the spasticity. The left upper limb is moved at all the joints, but with much diminished power, and is weaker than the right upper limb. Incoördination on voluntary movement is extreme, and the athetoid movement of the left hand is very pronounced on any voluntary movement, and occasionally when the patient is at rest. The left upper and lower limbs are more involved than are the right limbs.

The pupils are equal and respond promptly to light and convergence. The extra ocular muscles are normal. The tongue is normal. Facial nerve supply is normal on each side. There seems to be no positive involvement of the cranial nerves.

The boy is very intelligent.

Dr. Spiller expressed the opinion that the condition was probably the result of progressive involvement of the pyramidal tracts.

Dr. Williams regarded the case as so remarkable that he had very little to say about it, except that it is very extraordinary to note the exceedingly gradual progress of the symptoms and that they began in and were confined to the lower extremities for so long. He asked whether Dr. Spiller had remarked previously in this patient a projection of the jaw and a fixation of the forehead in the position of elevation of the eyebrows from time to time. The face gives one the impression occasionally of stiffness, being held in a rigid position. If not, whether Dr. Spiller did not think it seemed to indicate an extending of the process to that portion of the pyramidal tract which concerns the nuclei of the face? Otherwise it would seem that the process is so slow and so remarkably free from lesions of any other system than the pyramidal that it would appear to be a dystrophy of the pyramidal system beginning in the lower extremities. It would be interesting to see the case in the future. It reminded Dr. Williams a little of a very remarkable case he saw in the Salpêtrière in a boy of eleven, who acquired spastic symptoms, not so slowly as this, but in the course of a few months, which were pseudobulbar in type, but in whom the symptoms became entirely arrested, indeed improved very markedly. He did not think the cases resembled each other pathologically at all, excepting that there should be a progressive disease of that type. The case was regarded as being probably lacunar in the boy of eleven.

SOFTENING OF THE DENTATE NUCLEI CAUSING SYMPTOMS OF CEREBELLAR TUMOR

By William G. Spiller, M.D.

The patient, a male aged eighteen years, was seen by Dr. Spiller about April 23, 1907, in consultation with Dr. M. H. Bochrack, from whom the following history was obtained. The boy had been in fairly good health until about one year previously, at which time severe headache began. The pain was felt in the entire head and most severely in the occipital region. He had some ataxia in walking and would fall, especially to the right. He was very deaf, had vomited during several months, had much vertigo and divergent strabismus. Venereal disease was denied.

An examination of the eyes by Dr. James A. Kearney, April 4, 1907, gave the following results: "Media clear, the disc protrudes from the posterior wall of the eye very similar to the apex of a thimble (ampulliform). The vessels of the apex of the disc are engorged, especially the veins, and about four millimeters of their length is plainly seen. The vessels are then enveloped in the disc tissue and emerge at the base where they are of normal character. The difference in refraction between the apex and the base of the disc is two diopters. The refraction of the fundus is sphere plus five diopters. The character of the retina is normal but slightly irritable. The above examination is of both eyes."

The patient's condition at the examination by Dr. Spiller was as follows: when sitting in a chair the head was thrown far backwards, the neck muscles were stiff, the seventh, twelfth and fifth nerves were not implicated, deafness was intense and bilateral, stupor was pronounced, the iridic reflex to light was very feeble if present at all in either eye, the eyeballs