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LATE FORMS OF FAMILIAL PROGRESSIVE MYOPATHY.*

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It is of interest to study the variations of age at which the different heredo-familial diseases begin. For some of these the age of onset is a phenomenon of a certain importance in diagnosis—in Huntington's chorea, for instance.

As regards the progressive myopathies we know that not rarely their initial stage may date back to foetal life. It seems probable that a number of cases called 'amyotonia congenita' have not really been examples of this disease, but congenital heredofamilial myopathies. Moreover the myopathies may have their beginning in early childhood, in later childhood, or in youth.

Exceptionally the disease sets in after the age of 20 years, and after 30 years it is still more rare. From the literature I have collected some cases of late progressive myopathy in which the symptoms have developed after the age of 30. It is interesting that in the greater number there is no history of familial disease. Erb has shown that in about 50 per cent. of cases of progressive myopathy in childhood and youth there may be found similar instances in the family. In two of the published cases, however, the late myopathy seemed to be undoubtedly hereditary.

CASES FROM THE LITERATURE.

Sézary, Chenet and Jumentié showed in 1909 at the Société de Neurologie of Paris a patient whose father had suffered from a progressive muscular dystrophy of the scapulohumeral type, beginning at the age of 30. The patient himself began, when he was 60 years old, to complain of increasing loss of power of the shoulder muscles, and after some time developed atrophies and pareses of the humeral and shoulder muscles on both sides, while fore-arms, hands and lower limbs were not affected.

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In the case of Joffroy and Achard (1889) the brother of the patient had a paraplegia but no atrophy of leg muscles. The case is, however, somewhat uncertain. The patient, a woman aged 55 years, had been infected with syphilis in youth and she had suffered from pains in her legs, so that the possibility must be considered that the condition in reality was one of spinal syphilis.

Besides these two, in which the heredity of the disease was more or less probable, there may be found in the literature about twenty isolated cases.

Landouzy and Dejerine published in 1886 a case of myopathy in the shoulder- and arm-muscles, later in the facial muscles, which began when the patient was aged 40. Frohmaier (1886) observed a slow progressive myopathy with localisation in the shoulders and upper part of the arms. The patient was 58 years old and appeared to have suffered from the disease for about 20 years. Sacara-Tulbure (1894) described the case of a man, aged 49, in whom from the age of 41 a myopathy developed, with pseudohypertrophy, involving proximal muscular groups only. Lensmayer (1894) observed a septuagenarian patient who had developed, four years before, a feeling of feebleness in the legs. Palsies and atrophies of the proximal muscles developed, and pseudohypertrophy of the deltoids. Vannier (1895) wrote a thesis in which he collected a great number of cases of the Charcot-Marie-Tooth form of progressive myopathy. Among his personal observations is a case which started when the patient was 35 years old; another patient, aged 50 years, had suffered from the myopathy from the age of 30; and the third, aged 51 years, had been affected only three years before.

Oppenheim and Cassirer (1897) published the description of a patient, a labourer aged 42 years, who had suffered during two years from pains in the legs and paræsthesiæ in the fingers. During a certain period there had been psychical disorder, and it was remarked that the patient, whose atrophies were most marked distally, was very pale. From a modern viewpoint it seems not improbable that the patient suffered from an anæmia-myelopathy. Werdt in 1911 published two cases in which histological examination had been made, showing characteristic signs of pseudohypertrophy. The first patient was 64 years old, and she had suffered from the disease "for several years," with increase of the symptoms latterly. The other patient was a woman aged 74 years; her muscular atrophy had begun in her 50th year. Farnel's case (1911) was that of a woman with progressive myopathy of Charcot-Marie-Tooth type, developing from the age of 43. Cottin and Narville gave in 1912 a description of the case a woman aged 47 years. The first sign of disease possibly dated back to the age of 27, but it was not before the age of 41 that marked paralyses appeared, with pseudohypertrophy localized to the distal part of the four extremities. Orbison described (1914) a series of myopathies, two of which were late. (i) Woman, coloured, aged 38 years. About seven years ago she noticed inability to run quickly. Later, her back became

weak. She exhibited difficulty in flexing the thighs against pressure and there was marked lordosis. (ii) A man, aged 56 years, in whom the disease had developed a year earlier after a serious railway accident (this case does not seem a true progressive muscular dystrophy). A case of Simon and Aron, in which the myopathy was unilateral and localised in the fore-arm in a tuberculous patient, aged 43 years, seems somewhat doubtful. Viggo Christiansen presented in 1925 at the Neurological Society of Copenhagen a woman, aged 56 years, suffering from a progressive muscular dystrophy, but no description of the case has been published.

Finally we shall mention some cases in which the myopathy developed after trauma.

Erb described in 1891 a case of progressive muscular dystrophy in a man aged 41 years. At the age of 34 he had received a severe trauma. Eighteen months after this, an increasing weakness of the shoulder developed, accompanied by atrophy of some muscles, and pseudohypertrophy of others.

A. Hoffman gave in 1904 a description of a patient aged 43 years who had suffered, two years before, from burns of the arms and back. From that time an increasing weakness of the upper part of the arms and the dorsal muscles developed. He presented the picture of a juvenile myopathy with severe atrophy of the trapezii, erectors of the spine, humeral, gluteal and femoral muscles. Finally Caussade and Abel observed a man, aged 39 years, who had fallen from a height of three metres and hurt his right shoulder. After that a progressive muscular dystrophy of the scapulohumeral type developed, beginning in the right arm and spreading to the left.

It is probable that these traumatic cases have a different pathogenesis from the true heredofamilial abiotrophies. It is also possible that some described have been atypical cases of amyotrophic lateral sclerosis, spinal syphilis or anaemia-myelopathy. But excluding these possibilities there is no doubt that a certain number have been true progressive muscular dystrophies, beginning at rather an advanced age.

I have had occasion to examine two sisters (one of them in a detailed manner, the other rather cursorily) in whom progressive myopathy had begun at the age of about 45 years. The histories are as follows.

PERSONAL CASES.

CASE 1.

V. S. G., born March 11, 1879, unmarried, admitted to the Department for Nervous Diseases of Kommunehospital (city hospital) of Copenhagen on January 8, 1928.

Her sister, aged 50 years, whose history is mentioned below, suffers from a similar condition of the lower limbs. Apart from this, no familial history; her father died from cerebral arteriosclerosis.

In her childhood she had had measles, scarlet fever, and whooping-cough. She denies diphtheria, rheumatic fever, and syphilis. Menstruation began at the age of 13 years, and ceased one year ago.

Her *present illness* developed insidiously some five or six years ago with weakness of the legs. She became inclined to limp, sinking down on the right side and giving way at the ankles. Sometimes she fell. The condition grew worse, so that she was not able during recent years to walk without the support of a stick or the furniture of the room. If she tried to walk for longer than a quarter of an hour she would fall. She never experienced pains or paræsthesiæ in the legs and apart from their feebleness she felt absolutely well; she had no headache, giddiness, nausea, visual trouble or disturbance of micturition. During the last year or two she was sometimes affected by an indefinite feeling of anxiety when she was about to sleep. The progress of the disease was steadily insidious without periods of either improvement or arrest.

Examination of the patient revealed the following signs.

The patient was rather well nourished. Optic discs normal. Pupils equal, reacted well to light and convergence. Eye-movements normal. No facial or tongue paresis; speech natural. Throat reflex absent. Upper limbs normal as regards joints, tonus, power, muscular nutrition, co-ordination, reflexes and sensibility. Thyroid gland rather full but of normal consistence, not pulsating.

Examination of lungs and heart normal. Nothing abnormal by palpation of abdomen. The spine showed a very slight sinistro-convex scoliosis of its dorsal part and on the whole a limited mobility. Abdominal reflexes very active. Umbilicus moved a little upwards when the patient sat up. No disturbance of sensibility.

Lower extremities: The trophic condition of the muscles was somewhat difficult to determine because there was abundant subcutaneous tissue. There did not seem to be any diminution in size of the muscles, but rather somewhat increased volume of the triceps suræ. Free mobility of the hip- and knee-joints; hyperflexibility of the ankle-joint. Tonus was normal for movements of the knee-joint, diminished for movements of the ankle-joint. Power of femoral muscles very good. There was a considerable paresis of all the calf muscles, both in dorsal and volar flexion, in pronation and supination of the foot. The power of movement of the toes was diminished, but it seemed relatively better than that of the calf muscles. The pareses were symmetrical. Knee-kerks and ankle-jerks were completely absent, even when reinforced. Plantar reflex very feeble on the right, absent on the left side. Sensibility for touch and pain was diminished on the feet, the hypæsthesia decreasing upwards on the legs. Sense of position normal. No ataxia in knee-heel test and no instability of the raised extremities. During Romberg's test she repeatedly fell backwards. She walked with careful steps, holding her feet together, but moved her toes normally when walking. There was scarcely any drop-foot.

Electrical examination of the calf-muscles showed considerable quantitative diminution and slow contractions, but no qualitative modification. It proved somewhat difficult because of the abundant subcutaneous fat.

The skin of the upper and lower limbs was dry and scaly, with keratosis pilaris. There were numerous pigmented nævi on the back, and some on the arms. When she stood up her feet became cyanotic.

By lumbar puncture there was evacuated 4 c.c. of limpid uncoloured fluid, containing 2—7 cells per c.mm., 10 albumin, and no globulin (Ross-Jones-Bisgaard's method). Wassermann reaction and Sigma reaction in spinal fluid and serum were negative. Blood-pressure 120 systolic, 80 diastolic. Erythrocytes, 6,660,000. Urine contained nothing abnormal. X-ray examination of the spine from D9 to L5 revealed no abnormality, nor did examination of the joints of the feet. By X-ray, however, it was seen that the triceps suræ was rather voluminous and that the calf muscles exhibited a peculiar spotted appearance. The radiologists supposed that it was caused by the feeble shadow of the degenerated muscles in contrast with that of the interstitial tissue,

A test-excision of a piece of the left gastrocnemius was performed. When the fascia was opened, the muscle showed the aspect of pure adipose tissue, with some fibrous infiltration; and although the cut in the muscle was very deep all the tissue showed the same appearance. A small piece of the muscle was excised and microscopical examination revealed only adipose tissue, with some large veins, but without muscular substance.

During the patient's stay in the Department her pulse and temperature were normal, apart from a little increase of temperature on one day. Sleep and appetite were good. She gave the impression of being somewhat unintelligent, but otherwise she did not present any psychical abnormality. (A cousin of the patient supplied the information that she had been always a little 'imbecile').

From the Kommunehospital the patient was transferred to the Almindelig Hospital (Infirmary of Copenhagen). Her physician informed me in January 1930 that her condition had not changed since.

CASE 2.

The sister of the patient, D. G., aged 50 years, was not admitted to hospital but she allowed me to make a short examination in March 1928. She said that during the last three years she had suffered from increasing feebleness in her legs, soon grew tired when she was walking, and was unable to run. She had no pains in her legs, and apart from the weakness she felt absolutely well and could do some work when it was not too hard.

Examination of her legs showed that the calf-muscles were flaccid, but rather voluminous. The power of dorsal-flexion of the feet was very poor, and she was only able to stand on tip-toe for a moment. Knee-jerks and ankle-jerks were absent and there was no disturbance of sensibility.

COMMENT.

When we consider these two cases, there seems to be no doubt that the first represents a progressive muscular dystrophy, beginning at the age of about 45 years. It is probable that the sister is suffering from the same disease.

There are a few points of the history which must be mentioned.

It is curious that the biopsy showed that the 'muscular' piece from gastrocnemius only consisted of adipose tissue, although there was no absolute paralysis of plantar-flexion of the foot. Probably the explanation is that only a part of the gastrocnemius-muscle has degenerated, and that the soleus-muscle is in a better condition.

The case does not belong to any definite type of myopathy. It differs from the Charcot-Marie-Tooth type by the pseudohypertrophy of the calf muscles, and it differs from most of the juvenile pseudohypertrophic types by the distal localisation of the muscular degeneration and the slight disturbances of sensibility.

A point of a certain interest is the curious finding of the X-ray pictures. At any rate, there is surely reason to make X-ray examination (by soft tubes) in many cases of myopathies, such pictures being able to furnish information concerning the condition of the muscles.

Apart from these features the described cases are rare because of the late development of the muscular pseudohypertrophies.

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