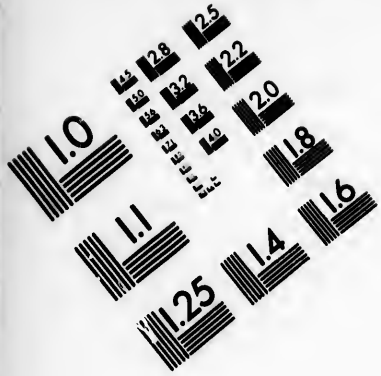


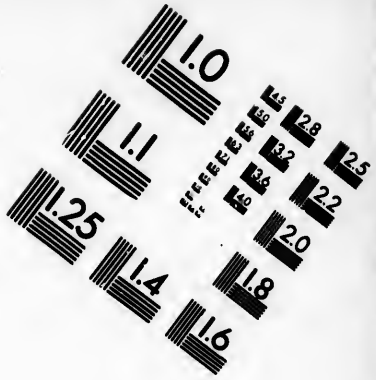


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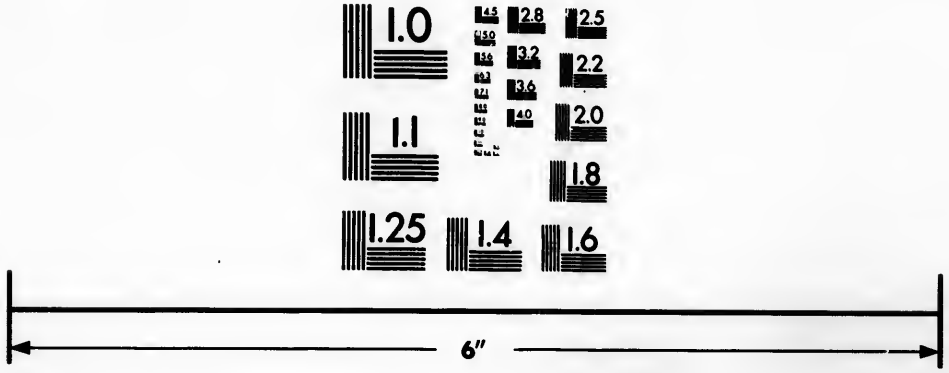


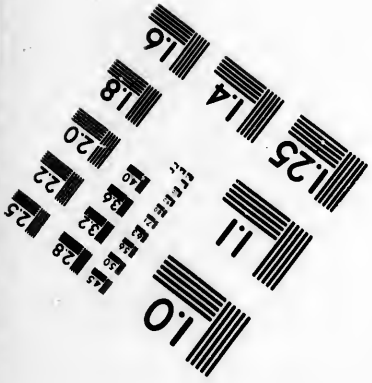


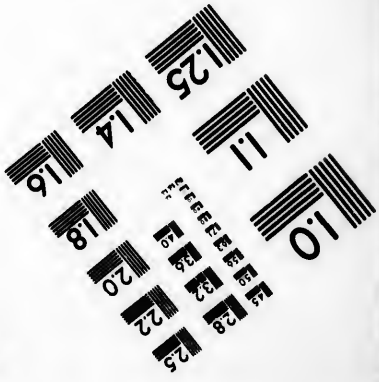


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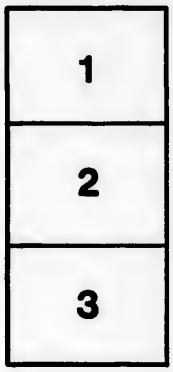


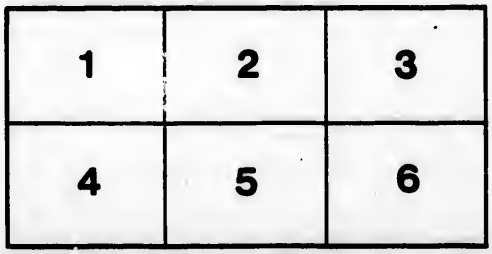

(Reprinted from the Montreal Medical Journal, March, 1896.)

# CLINICAL LECTURE ON TWO CASES OF MULTIPLE ARTHRITIS DEFORMANS.

DELIVERED AT THE ROYAL VICTORIA HOSPITAL.

JAMES STEWART, M.D.

Professor of Clinical Medicine, McGill University; Physician to the Royal Victoria Hospital.

The first case which we will consider to-day is that of S. G., aged 26. He was admitted into the Royal Victoria Hospital on the 26th of September, complaining of enlarged joints, difficulty in walking and weakness.

His present trouble began three years ago with stiffness and pain in the shoulder joints. A few months afterwards the joints of the fingers became swollen, stiff and painful. He has frequently complained of a sensation of burning and tingling in the extremities.

About six months later the knees became involved, and the trouble here progressed so rapidly that in a few weeks he was only able to get about with the aid of two canes. About the same time he lost rapidly in flesh and colour. The elbows soon afterwards were found to be stiff and painful.

As to his past history, there is nothing to note except that he had diphtheria when eight years of age, followed by abscesses in the neck, one of which was opened and discharged. His occupation is that of a clerk. He has used stimulants in small amounts occasionally.

*Present condition*—You will notice that he is pale, the general state of nutrition being poor. There is beginning general arterial sclerosis. The pulse is regular, 72 in the minute and of low tension. When admitted a soft systolic murmur was heard at the pulmonary area, but has since disappeared.

The tongue is flabby and slightly coated, appetite good, bowels regular. The abdomen, liver and spleen normal. Mental state normal. There is wasting of the thenar eminences, interossei, flexors and extensors of the forearms, and to a less extent of the muscles of the upper arm, the motor power is diminished in the upper extremities, there is slight wasting of the supra and infra spinati on both sides, fibrillary twitching of the muscles is observed; sensibility to touch and pain normal, muscular reflexes slightly increased.

There is wasting of the adductors of the thighs and flexors of the leg, the feet have apparently escaped, but there is slight hyperexten-

sion of the lesser toes on both feet, sensibility is normal. Knee jerks are considerably exaggerated, ankle colonus present. Motor power somewhat diminished. There is considerable fibrillary twitching; electrical reactions are normal in the muscles of both the upper and lower extremities. The spine is normal. There is limitation of abduction at the shoulder joints, the elbow joints cannot be completely extended, and there is also limitation of all movements of the wrist and finger joints. The fingers are deflected to the ulnar side. There is a pseudo-crepitus in many of the joints. The knee joints are uniformly enlarged, and complete extension is impossible without great pain, the ankles and toes are not deformed. All the muscles are soft and flabby. The patient is able to walk when supported, but does so with the knee semi-flexed. Blood examination, red cells 4,120,000, hæmoglobin 68 per cent., no leucocytosis. The urine is normal.

Case II.—W. B., aged 46, admitted complaining of pain in the joints and inability to walk. Born in Canada. Had typhoid at 16 and gonorrhœa about nine years ago. Has used alcohol until about a year ago. Works as a last maker. Father alive, aged 86, subject to cough all his life. Mother alive and healthy. Has two brothers, one said to be phthisical; three sisters, none of whom are strong.

*Present illness*—First symptoms set in about twenty years ago. Patient was out driving and felt a severe pain in the left knee, had to be lifted out of the carriage, and was confined to bed for three months. The knees became red, swollen and hot, and the left hip appeared to be somewhat painful also. After this attack he was able to go about with the help of a stick. About two years later he had another attack and went to Caledonia Springs, but did not derive much benefit from them. About this time he noticed that his left knee was gradually becoming enlarged. There also gradually set in a stiffness in the fingers of the left hand, so that he had difficulty in closing them. He had a number of such attacks every few years, until about nine years ago, when he had a specially bad one, having pains in knees, feet and hips. After this attack he did not work for three years. Up to about a year ago he was able to walk with the aid of two sticks. A year and a half ago contraction in the fingers of the right hand set in and gradually increased. The right knee then began to enlarge and both knees became semi-flexed, so that he could not stand.

Patient is a man of medium height, dark complexion, somewhat anæmic. Is unable to walk, but can raise himself in bed and use his arms. Has been accustomed to use morphine for a year and a half,

taking as much as two grains a day on some occasions. Has very frequently to change his position in bed.

Pulse 66. Some arterial sclerosis. Cardiac dulness normal. First sound is a little weak at the apex, being short and sharp like the second sound. Aortic second is possibly a little accentuated.

There is marked wasting of certain muscular areas. In the right hand the interossei, thenar and hypothenar eminences are markedly atrophied and the muscles flabby. In the right forearm the muscles are also considerably atrophied. The fingers look thin on account of the muscular wasting. In the left hand and forearm the condition is similar, but to a much less extent. The fingers of the right hand are deflected greatly to the ulnar side. The metacarpo-phalangeal joints are flexed and the phalanges are extended. There is contraction of the muscles so that the distal joints cannot be flexed. The second finger, is also hyper-extended at the junction of the second phalanges. On the left hand the fingers are slightly deflected. There is inability to shut the fingers in the palm tightly. The second finger is hyper-extended at the junction of the second and third phalanges. Elbows and shoulders seem to be free.

In the feet the toes are extended at the metatarso-phalangeal joints, and flexed at the distal joints. On the dorsal surface of the first and second toes of both feet there can be seen and felt what appears to be small sharp spicules of bone, not movable with the skin.

Apparently no atrophy about the muscles of the feet. The muscles of the legs are extremely wasted in all groups. The thighs are also considerably wasted, more especially the quadriceps muscles and the adductors. There is some tenderness on pressure over inner side of the right humerus.

Patient has only perception of light. Marked arcus senilis. Cornea is steamy. Dr. Buller reports old plastic iritis with occluded pupil.

Marked enlargement of the ends of the tibia and femur forming the knee joints. Contour of joints is lost. Knees are kept semi-flexed and cannot be further extended. There is some enlargement of the metacarpo-phalangeal joints and slighter of the phalangeal joints. Movement of the hips is fairly free.

Tongue clean, appetite good, bowels constipated, liver and spleen normal.

Urine acid, sp. gr. 1013; no albumen, no sugar.

We have here to do with two well marked cases of general arthritis deformans, the first case being one of the idiopathic variety, the second in all probability being secondary to an attack of acute rheumatism. It is important to inquire into the causes which induce

this disease. First as to the influence of sex—it is much more common in females than males. Sir A. Garrod in a series of 500 cases, found that there were no less than 411 females and only 89 males affected. The liability to the disease is greatest between 40 and 55, but no age is wholly exempt. Cases have been recorded in children under 10, and a local form of the disease is more frequent in men over 60 years of age. It is much more common in women in the two or three years succeeding the menopause. Direct heredity, no doubt, plays an important role in the causation of the disease, indirect heredity of nervous diseases also being an important factor. The following may be mentioned as the more important exciting causes of arthritis deformans: 1st, overwork; 2nd, worry; 3rd, acute, severe illness; 4th, insufficient food and bad hygienic surroundings. Excessive work, especially when combined with worry, is the most prolific cause. It is not uncommon to meet with the disease after severe attacks of diphtheria, typhoid fever and influenza. In a general way it may be said that any disturbance that tends to lower the resisting power acts as an exciting cause of the disease. In this respect arthritis deformans differs markedly from gout. I will not detain you with a minute account of the morbid changes in the affected joints. It will be sufficient to say that the chief structures entering into their formation all suffer; the cartilage, the synovial membrane and the bones. The cartilage covering the joints becomes soft and finally disappears, leaving the ends of the bones bare and in consequence of friction the latter become smooth and hard. Along the margins osteophytes form.

The nature of the disease is still a problem. Some contend that it is simply a form of chronic rheumatism, hence the name rheumatoid arthritis; others consider it to be a mixture of gout and rheumatism, hence the name rheumatic gout. Some consider it to be owing to simple wear and tear of the joints, while again others think it simply a senile change. All these hypotheses completely fail to account for the morbid changes and symptoms. The causes leading to arthritis, the clinical features of the disease both articular and abarticular point very strongly to a nervous origin. The view most commonly held at the present time is that it is brought about by changes in the nervous mechanism which presides over the nutrition of the joints. Although this is yet a mere hypothesis, positive proof of such changes being wanting, there is much to be said in its favour. First we have very similar changes in certain diseases of the spinal cord which we know are attended by grave degenerative changes in this part of the central nervous system. In tabes dorsalis, a marked

feature in some cases is distrophic joint changes. Anatomically and clinically there is a resemblance between such changes and those met with in arthritis deformans, the changes in the synovial membrane and articular cartilages being very similar in both diseases. In tabetic arthropathy the onset and course is more acute, and there is but little tendency for osteophytes to form. Further, the destructive process is more marked than the reparative process as exemplified in the formation of bone. In the disease known as syringomyelia a somewhat similar destructive arthritis is met with as in tabes. We also meet with arthritis in cases of progressive muscular atrophy of spinal origin. (A photograph illustrating such changes was passed around.) The peculiar symmetry of the joint affections in multiple arthritis deformans is another reason for ranking it among nervous affections; such symmetry is, however, not universally present, but it is met with in a great majority of cases. Symmetry is the rule in arthritis deformans, while it is the exception in gout and rheumatism. In arthritis deformans the most peripherally situated joints are first affected, this being characteristic of nervous affections. Another important feature of arthritis deformans, is that it does not tend to implicate the visceral organs as does rheumatism and gout. The almost invariable presence of muscular atrophy and of sensory nerve disturbance, point to a neurotic origin. There have been as yet, however, no changes demonstrated in the central system—changes have been found in the peripheral nerves, but such are so frequent in all severe and exhausting diseases that they cannot be considered as a cause of arthritis deformans.

*Clinical Features of Arthritis Deformans.*—The disease may be ushered in with all the features of an acute rheumatism,—this was the case with our second patient; such a mode of onset is more frequent in old than in young people. The usual mode of onset is of a subacute or chronic character, swelling and pain being present; but the latter is seldom so acute as to compel the patient to rest. In the course of a few months, however, the joints become seriously crippled; in the very chronic cases the course is very slow, years elapsing before profound alterations take place in the joints.

*Bone Lesions.*—The trouble usually begins in the small peripheral joints; in the great majority of cases it is symmetrical. In the general form of the disease the hip-joints are least often affected, while in the senile form, the morbid changes are generally monoarticular and often limited to the hip-joint. There is hardly a joint in the body that may not be involved in general arthritis deformans, the temporo-maxillary joints, as well as those of the spine, being not infrequently affected.

Muscular atrophy is a striking feature of nearly all well marked cases of arthritis deformans, this symptom being well marked in both cases before you; it is not due to disuse of the muscle, neither can its origin be explained on the ground of reflex disturbance. There is every reason to suppose that it is either due to central or peripheral changes. It is accompanied by fibrillary twitchings and increase of the tendon reflexes, not only in the neighbourhood of the affected joints, but in distant muscles. Tremors resembling the tremor of paralysis agitans are met with in cases of arthritis deformans. The reaction of degeneration is also met with in advanced cases of atrophy. In all stages of this disease minor sensory disturbances, as numbness and tingling are complained of. Subcutaneous nodules in various parts of the body, especially on the back and flexor surfaces of the forearms, are now and then met with in arthritis deformans They are more frequently met with in young adults and resemble in every respect the subcutaneous nodules met with in acute and subacute rheumatism of childhood.

The general state of nutrition is lowered, especially when the disease comes on early in life, anæmia being a frequent accompaniment of the disease; although there is general pallor in both of our patients there is not much diminution in the number of red blood corpuscles or in the amount of hæmoglobin. Persistent rapid action of the heart is commonly present. It is often an early symptom, being present before any special joint changes are present, the pulse usually ranging between 80 and 100 a minute. It is independent of pyrexia, for as a rule there is no elevation of temperature except when there is an acute arthritic exacerbation. Pigment spots on the skin in the neighbourhood of the affected joints are considered by Kent Spender to be of diagnostic value. The skin is often glossy and atrophied; trophic changes in the nails and local sweatings are unusual manifestations. A negative symptom of importance in arthritis deformans is the absence of any organic changes in the visceral organs.

*Prognosis*—Arthritis deformans if uninfluenced by appropriate treatment tends to become worse and worse until the patient is left a helpless cripple. In the earliest stages of the disease there can be no question that the morbid process may be arrested by judicious treatment. If, however, the changes in the joints have gone on to the destruction of cartilage nothing can be done except to give relief to the distressing symptoms. Patients do not die directly from the disease, but from some intercurrent affection.

*Diagnosis*—It is important that an early diagnosis should be made. Frequently this is far from an easy matter. The following are the more important symptoms of the disease:

1. Pain and stiffness in the joints. These symptoms are especially suggestive if occurring in anæmic females, about the menopause, and who have been overworked and worried.
2. Numbness and tingling of the extremities.
3. Rapid pulse without pyrexia.
4. Pigmentation of the skin.

The above symptoms form a clinical grouping which may be taken as practically diagnostic of arthritis deformans. It is often impossible, at any rate during the acute stage, to diagnose correctly those cases beginning with sudden and severe arthritis. The resemblance to acute rheumatism is too close to admit of anything but a probable diagnosis. With ordinary care there is no difficulty in making a differential diagnosis between arthritis deformans and chronic articular gout.

*Treatment*—Until quite recently the treatment of arthritis deformans received no serious attention; it was too frequently placed in the list of chronic incurable maladies which might be relieved a little, but could neither be arrested nor cured. When any treatment was employed it was too frequently of a lowering character. At the present time there is not a general recognition of the danger attending such treatment. When the disease is in an early stage and the patient comparatively young much can be done to stay its progress or in favourable cases to entirely arrest it. The means to be used in order to obtain this end are:

1. The removal, if possible, of all existing causes, such as improper and insufficient food, overwork, worry, etc.

2. The employment of agents which help to increase the general state of nutrition. If the patient can afford to reside in a mild, dry climate in winter, he should do so. The food should be the best obtainable, and every possible means should be taken to promote the appetite and aid digestion. Iron, cod liver oil and arsenic are all agents of great value; they should be given for prolonged periods. Sir A. Garrod considers the iodide of iron especially valuable. Iron and arsenic may be given during the summer months and cod liver oil during the winter. It is not well to continue arsenic for too long a period in advanced cases, for, as pointed out by the late Palmer Howard, it tends to aggravate the arthritis. The thermal bath treatment of arthritis deformans is of undoubted value. At Bath a course of douching with massage has a deservedly high reputation. In Germany and France there are many resorts also where this mode of treatment is carried out with more or less success. At Banff, in our own country, every convenience is procurable for the proper treat-

ment of such cases. It is well, however, to make the patient understand before resorting to thermal baths that no measures should be employed that tend in any way to weaken his resisting powers. The patient during his stay at a bathing place should be under constant medical supervision.

The local treatment of the disease calls for the relief of the pain and spasms; the former may be combated by lotions of iodine and belladonna, the latter by fomentations; at the same time the patient should rest. Quiet should also be enforced during an acute exacerbation of the arthritis; salicylic compounds may be found of value also in such cases, and in those cases where the onset is that of the acute or subacute rheumatic type; at other periods of the disease salicylic acid should not be given, as its continuous employment tends to depress and therefore defeat the main object of treatment—increasing the resisting power.