Notes on a Case of CHRONIC POLYARTHRITIS (Still's Disease) treated by Intravenous Protein Therapy

BY

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The prognosis of the type of polyarthritis which is known as Still's Disease is varied. It is certainly true that in some instances the process comes to an end and recovery takes place. Yet in the majority, at least in my own experience, the disease when once established seems to progress in spasms and while often leaving the general health comparatively unaffected, in the end produces such a degeneration of the powers of resistance that the victims succumb readily to some form of acute infection. Even when recovery does take place the results of the repeated attacks of arthritis often leave a considerable disability in the deformed or ankylosed joints.

It is these considerations which impel me to place on record the details of a case of this disease in which a certain form of treatment, protein shock, appeared all but instantaneously and completely to cure the affection.

The child, a girl, was aged four when she first came under my observation in 1922. At that time she had some thickening of the soft structures and of the synovial membrane of the left knee-joint, together with a considerable and painful effusion into the right knee-joint. In addition, there was swelling of both tarso-metatarsal joints with œdema of the dorsum of the feet, and both wrist-joints were painful and swollen. The joints of the fingers were stiff, but were not painful. At this date the shoulders, hips and spine were unaffected. The spleen could be easily palpated, and was certainly larger than normal: and the glands were enlarged on both sides of the neck, in both axillæ, and in both epitrochlear regions. In fact she was a typical picture of Still's disease. From time to time she had bouts of moderate fever, with increase of pain in the affected joints.

Various attempts were made to endeavour to track the source of infection. Her Wassermann reaction was negative. X-rays shewed some rarefaction of the ends of the bones. v. Pirquet's reaction was negative, and with a subcutaneous injection of bovine tuberculin ·005 grm. there was a slight positive reaction. Fluid from the joint was sterile on cultivation. Lastly, there was no obvious source of infection in throat, mouth, ears or urinary or alimentary tract.

With rest in bed her joint condition improved but directly she was allowed to get up the right knee-joint filled and became painful. She then had the joint placed in plaster for four months. After this she was admitted to the hospital for tonsillectomy although her tonsils were not obviously infected. The removal of the tonsils was followed by acute fever to 102°, and hot painful

swelling of both knee-joints. After an interval these symptoms subsided and she was discharged from hospital walking stiffly but free from fever or pain.

Two months later she had a fresh attack of fever to 103° with painful swelling of both knee-joints, both wrists, and the left elbow-joint. The epitrochlear and axillary glands were again enlarged and the spleen easily palpable.

At this stage I thought that it was permissible to attempt to combat the infection with some form of intravenous therapy, and she was given a .2 grm. dose of neo-kharsivan: a dose which as the event shewed was poisonous. She had an immediate fever, was very ill with vomiting; on the fifth day from the injection developed a pink urticarial eruption over the whole of the trunk and limbs, and on the fifteenth day was deeply jaundiced with bile in the urine and clay-coloured stools. She had some delirium and wasted very rapidly, and at one time I thought that she was not going to recover. However, the jaundice slowly improved and two months after the jaundice began she was fit to leave the hospital, walking very stiffly with limitation of movement in all the joints which had been affected.

A fortnight later she had fresh joint trouble, more extensive and more severe than at any previous attack. Both knees, both feet, both wrists, and the vertebræ of the neck were involved. She could not be moved at all without much pain. The pain prevented her from sleeping. She had some moderate fever and a marked degree of wasting set in.

At this time she had two or three injections of collosol sulphur, but beyond a slight increase in the range of the fever we could see no benefit.

In July, 1923, she was in such a condition of pain, fever, wasting and general misery that I determined to employ protein shock. I had previously used this method in some arthritic cases in adults, but never before in children. She

TEMPERATURE AND PULSE CHART.

On 3rd day, 50 millions T.A.B. Vaccine given intravenously: subsequent doses, at A, 75 millions; at B, C and D, 100 millions.

was given intravenously 50 millions of T.A.B. vaccine. This was followed as is usual, in about half an hour, by a severe reaction ; headache, nausea, vomiting, and fever to 101°. At the end of half an hour she went to sleep and woke an hour later, not merely feeling quite well, but with already freer movements of the joints. This rapid relief from pain is often extremely well-marked in adults. In the next four weeks she had four further injections of T.A.B. vaccine, one of 75, and three of 100 millions. Each injection was followed as the chart shows, by severe reaction, rigor, headache, vomiting, and rise in temperature and pulse-rate, but with each injection she showed such marked improvement both in general condition and in the relief of pain and swelling of the joints that we were willing to pursue the treatment. After the fifth injection she had so much improved that she was allowed to get up and shortly afterwards went home.

It is now nearly four years since these events. In that time she has had no return of either pain or swelling, and though there remains some thickening of the synovial membranes of the knee-joints and some thickening of the soft parts round the other joints which were affected, she has no limitation of movement in any joint : she can run and jump, goes to school normally and is making normal progress in weight and height. Her glands are no longer enlarged and her spleen cannot be felt.

There is not, of course, anything novel in the application of this "shock" treatment to a case of arthritis. Gow and others have described some striking examples of refractory joint disease which have been benefited by the procedure. It is known that one of the results of the "shock" is the sudden increase in the number of leucocytes in the peripheral circulation, and Gow believes that this increase is due to the pouring out of new cells from the bone marrow. But it is to me extremely difficult to account by this means for the immediate benefit in the relief of pain, and, in this case, in the rapid, complete and permanent disappearance of a chronic infective disease. Other authors have assumed that the effects of the injections are due at least in part to the flooding of the whole body with ferments and anti-bodies. The proof of such an event is probably not within our present powers, although it has been shewn that in some of the specific infections, such as gonorrhœa, the agglutination titre has been increased.