TWO CASES OF TUBERCULAR JOINT DISEASE TREATED BY DENYS' TUBERCULIN.

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CASE I.—T. W., aged thirty-nine. Both parents died of phthisis. Five brothers and six sisters died under two years of age. Served twelve and a half years in army. No specific history. Moderate drinker. About five years ago he noticed right ankle swollen ; it was painful on exertion ; he had difficulty in getting on a boot. Some nine months later it commenced to discharge, and disease soon spread all round the lower third of leg. He was admitted to the South Dublin Union Infirmary on August 28, 1904. He was treated for tubercular ulcer of the leg and ankle. No operative measures were adopted, and the ulcer nearly healed on two occasions. The patient came under my care in October, 1906. At this time the ulcer was very unhealthy-looking, with a profuse sanious discharge ; it extended around the leg, and was superficial, except in two places. There was an abscess on left arm about two inches above the outer condyle ; two sinuses then made their appearance, and a little later the shaft of the ulna was affected. A swelling next appeared about four inches above inner condyle of right arm. The sinuses in the left arm were discharging freely when I commenced tuberculin injections on January 21, 1907.

The temperature at this time ranged from 100.4° to 99.2° . For three and a half months the only change observed in the temperature was that at some part of the day it fell to 98° . Three times it rose to 101° , but only once within forty-eight hours after an injection, and this was the only occasion on which there was a rise after an injection. From May 12 the temperature was rarely over 99° , and since October 16 the temperature has only twice reached 99° , the range being from 97° to 98.4° .

The discharge from the sinuses usually increased after each injection, and for about a month the right arm got steadily worse

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in fact, many times during these three and a half months I asked myself whether I should not scrape. About May 12 a general improvement set in, the discharge decreased, and the ulcer and sinuses gradually healed, the last sinus being completely closed early in September, 1907. I gave fifty-three injections in this case.

The X-ray photographs show how difficult any surgical procedure would have been in such extensive disease. This patient's weight when I commenced treatment was 8st. 13½lbs.; it has been for the past three months 10st. 9lbs. He has been doing active work in the wards, gardening, &c., and can play a good game of handball for the past six months.

The X-ray photographs show some thinning of upper third of fibula and very extensive "matting" of the tarsal bones; in fact there are only very faint indications of separation between the individual bones of the tarsus or between the bases of the metatarsal bones. In the case of the arm there is also considerable thinning of the upper third of the radius, the outer edge standing out as a sharp, clear line, the inner margin for about three inches below the tubercle being clear, but not so sharp, as the outer border, while the shaft between is thin and indefinite.

It is surprising what good movement there is in the ankle-joint considering the extent of the disease, and the man walks or runs without any trace of lameness.

CASE II.—M. S., aged twenty years. About six years ago got a fall on elbow, and her "elbow was out" for one month. No tubercular history. In March, 1905, complained of pain in right arm above elbow; this became swollen, and in May an abscess formed. Shortly after this pain was felt in right wrist. In August this commenced to discharge. In October the wrist abscess was opened in the Dispensary of Sir Patrick Dun's Hospital. In November, 1905, felt pains in both feet, and had difficulty in walking. A month later abscesses formed in both feet. In January, 1906, she was admitted to Sir Patrick Dun's Hospital

where the abscesses were opened and bones scraped. Only temporary relief was obtained, and she left hospital for the Convalescent Home on June 29, 1906, with wrist and both feet discharging. Her general health improved, but discharges continued. After her return to hospital she went to Stillorgan for a month, and lost five pounds in weight.

In October, 1906, she went to St. Vincent's Hospital, where she was told she was too far gone for an operation.

She was admitted to the South Dublin Union Infirmary in October, 1906, and came under my care on December 16. At this time every sinus was pouring out matter, the left foot in particular having a most offensive discharge. The girl was extremely wasted. Temperature 100° to 102° ; pulse 100; weight 6st. 3lbs. It was only after considerable hesitation that I made up my mind to treat such a case, and I had no hope of a successful termination. I told the girl I considered her case hopeless. I commenced treatment on December 20, 1906, by an injection of .5cc. of $\frac{1}{1000}$ Denys' tuberculin. In the whole course of her treatment, lasting sixteen months, an injection every six days, with an occasional seven or eight day interval, was given for the first ten months, and during this period there were only five temperature reactions—namely, January 5 and 23, 101° ; January 26, 101.4° ; March 1, 99.4° ; March 6, 101° . Since then, over a twelvemonth, the girl's temperature has never been above normal. The injections of the first three months had all a decided local reaction, causing some pain, heat and increased discharge, this very soon ceased in the case of the elbow and wrist, and in the left foot healing commenced early in March, or about ten weeks after the first injection. The dorsum of the right foot showed little sign of improvement until treatment had continued for over four months. The last sign of discharge from any of the ten or eleven sinuses was June 10, 1907, just over six months from the commencement. I continued treatment at longer intervals up to the end of the year.

The Present Condition:—There is a healed sinus adherent to the bone on the outer side of the middle of the forearm, and also one inch above the inner condyle of the right arm. The humerus is certainly thinner on this side. The marks on the dorsum of the right foot and at the base of the first metatarsal and outer

side of os calcis show how extensive the disease had been. The girl can walk perfectly, and can dance without fatigue.

Weight—December, 1906, 6st. 3lbs. ; June, 1907, 8st. ; December, 1907, 8st. 4lbs. ; and March 26, 1908, 9st. 9½lbs.

The X-ray photographs in this case show extensive disease in the right carpus, with general “matting” and pulping of the carpal bones ; the styloid process of both ulna and radius have completely disappeared ; the articular surface between radius and semilunar is fairly distinct, but all the other articulations are fused together. The tarsal articulations also show extensive disease, the left ankle in particular being very little the better than previous case.

A very interesting point about these two cases is the extensive range of movement preserved after such extensive disease, and there is no doubt such could not be the case after any ordinary surgical procedure.

As regards the effect of the tuberculin treatment on the two cases I have brought before you, perhaps you will allow me to quote a passage from “Three Sermons on Christian Reunion,” by the Rev. William Delany, LL.D. :—“Disease may be dealt with in two ways : One—slow, indirect and ineffectual—by treating locally each outward symptom, leaving the root of the evil untouched ; the other—rapid, radical and complete—going at once to the source of the disease and eliminating it from the system, when the local symptoms disappear of themselves.” This is not from a medical text-book, but it would, I believe, be difficult to find a better summary of the effect of tuberculin on these cases.

THE CHAIRMAN said his practice had been confined to Koch’s tuberculin. T. R. Denys’ tuberculin appeared to be a very effective preparation, and he would like to know some details as to the method and the indications as to dosage.

MR. LÉNTAIGNE said it was a mistake to think that tuberculosis had not been cured in the past. He had seen numbers of cases that had got well of themselves. Recently he had had a large number of cases of complete cure, the time of which was measured by months, not by years, as in the cases exhibited. While expressing his appreciation of the good work done by Dr. Dunne, still he believed that the results would have been more quickly attained by surgical assistance. He himself was assisting surgical treatment by tuberculin, and he had found that Koch's tuberculin had not to be given so often as Denys'. Perfect cure had been obtained by gauging the injections by the opsonic index, but it was a difficult method, and he had seen no increased negative phase produced by calculating in a rough way the time of the negative phase of the previous injection. If the disease was found to persist or recur—and no one could say that the cases exhibited would not recur—they should look to the surroundings of the patient, as the question of environment was of great importance.

PROFESSOR MCWEENEY said the method for obtaining Denys' and Koch's tuberculin was the same up to a certain stage. Both grew the tubercle bacillus on the surface of a broth containing five per cent. of glycerine, and filtered off the bacilli. But Koch's method from that point consisted in evaporating the liquor of the culture to one-fifth of its original bulk, while Denys' used it without reducing it in volume. The difference, then, was that Denys' contained presumably toxic and presumably therapeutic materials which were easily destructible; these would be destroyed by boiling, in Koch's. The latter was more concentrated than Denys, but he was not aware of any difference in the dosage. Nowadays the tendency was to have a small dosage, and to avoid producing a reaction in a rise of temperature; in Koch's old system a rise was considered necessary. He had lately been working with tuberculin in ophthalmo-reaction. He used Koch's old tuberculin diluted to the strength of two per cent. This provided material for hundreds of patients at a cost of 8s. 6d. One drop produced the desired result. Contemporaneously with this he used the cutaneous reaction by inoculating both arms, the right with a drop of twenty-five per cent. of the old tuberculin and the left with three per cent. boric-acid solution. In a couple of

cases he thought he noticed a marked therapeutic result from the method in the absorption of a pleural effusion, and in two other cases there was a distinct improvement in the symptoms. As the result of his experience of the opsonic index, he stated deliberately that, in his hands at least, he had never been able to convince himself that the errors of experiment did not outweigh the very slight differences from the normal obtained by means of the method, and he did not think he would attach any importance to opsonic indices obtained otherwise than by Wright himself, his immediate assistants, or those who worked for a prolonged period under his immediate supervision. He had treated a few cases in private for tubercular glands in the neck, and he did so deliberately without the opsonic index. After the injections of bacillary emulsion the glands had a tendency to swell, and afterwards they rapidly underwent diminution, and practically disappeared, although he would not say that the patients were absolutely cured, as in some cases it tended to come up again.

MR. M'ARDLE said that, while the theory with regard to the influence of tuberculin might be discussed by scientists, it was their duty, as practising surgeons, to take heed of what really happened. It would be impossible to carry out the serum treatment in many cases if they were obliged to have some one capable of taking the index at their elbow all the time. The treatment of the cases before them had been carried on in what might be called a haphazard way; but he had seen cases where, with the persistent employment of tuberculin, the patient rapidly put on flesh. He had seen laparotomies, for instance, carried out without beneficial effect, and after the injection of tuberculin the patients recovered, and were now quite well. He had seen a vast improvement in some of Dr. Dunne's cases—cases which were apparently hopeless—under the influence of tuberculin. But while tuberculin exerted a beneficial influence in such cases it exerted no influence, but a harmful one, once abscess formation had occurred.

DR. DUNNE, in reply, said he had no hope of being able to use the opsonic index, as he had too many patients, and too little assistance, to be able to do so. He was guided, as to the dosage, by the effect of the injection on the patient. That might be a temperature or a local reaction, but as much as possible he avoided a temperature reaction. If there was marked reaction he either

left a longer interval or reduced the dose. He quite agreed that operative treatment would, in some cases, materially hasten recovery. He had about ninety cases under tuberculin treatment, and he found that he got the best results with small doses at short intervals. After three and a half years using tuberculin he was firmly convinced that, as far as their present knowledge went, there was no treatment anything like equal to it for tuberculous affections, no matter where situated.