

CORRESPONDENCE

This department is provided for the publication of informal communications which are of interest because they are informative or stimulating, and for the discussion of controversial matters.

SURGICAL REMOVAL OF SOLITARY LEPRIDS

Certain of the follow-up observations reported by Rodriguez and Wade in this issue (p 309) in cases of neural leprosy that were biopsied in 1933 and 1934 led us to make inquiry of a number of workers elsewhere concerning their experience with the surgical removal of solitary leprids. The inquiry was substantially as follows:

In a group of out-patient cases that we have been following at Cebu for some years, are two in which the single original skin lesions—solitary, small leprids—were completely removed by biopsy in getting material for histological examination. In neither of them has there been any further manifestation of the disease.

The significance of this fact is, of course, very uncertain. Certain other cases in which there was only a single lesion at the outset have quite cleared up, in most instances with so little treatment that the favorable outcome could not be ascribed to that factor. There is always the question in such cases, wherever they are met, of whether or not "cure" is spontaneous or due to medical intervention; and it may be that the two cases referred to might have cleared up if left alone. However, it is perhaps not impossible that in the neural type of the disease the infection may sometimes be local, at least for a limited time; and if that is so surgical intervention in such a stage would be logical as an abortive treatment.

This leads me to inquire (a) if you have had any experience with the complete surgical removal of such solitary lesions in bacteriological negative, nonlepromatous cases, and (b) whether or not you think that it might be justifiable to follow that procedure experimentally in suitable cases, with of course controls to establish what happens to cases given other methods of treatment under similar circumstances.

[It might have been added that in certain instances removal of the lesion was incomplete and the remaining portions progressed.]

Before giving the replies to this inquiry that have been received, note will be made of the following reports that have been found in a very superficial survey of recent literature.

W. J. Goodhue and H. E. Hasseltine reported [*Publ. Health Reports (U.S.P.H.S.)* 39 (1924) 2680-2683] the case of a child born of leper parents and removed to clean surroundings within six hours, who at the age

of 19 months developed pale, nonesthetic patches of doubtful nature on the right cheek and the backs of the thighs, and also a reddish-brown, slightly raised nodule in sections of which acid-fast bacilli were found. The nodule was removed and four months later there was no sign of clinical activity and the scar was free from acid-fast bacilli. [Goodhue, W. J. and McCoy, G. W. *Publ. Health Bull.* No. 75 (U.S.P.H.S.) 1916, pp. 21-22.] After a further seven months a few atypical acid-fast bacilli were found (later considered to be of doubtful significance) and the child was returned to the colony. At the age of 10, however, no evidence of the disease was to be seen, and when similar findings were had in the following year the child was declared free from leprosy. This conclusion, the writers added, was strengthened by the results that had been obtained more recently by the surgical removal of lesions in other patients who had few nodules which were small and well defined. [The abstractor in *Tropical Diseases Bulletin* (L.R.) commented on the importance of this observation, "especially in view of the numerous cases now coming forward in the earliest stages of leprosy, and it supports Muir's contention that many of the first noticed lesions are the site of primary infection through the skin, for which early excision is now clearly indicated."]

J. M. M. Fernandez and S. Schujman recorded [*Rev. Argentina Dermatosisif.* 28 (1934) No. 1] a case in which there was a solitary *lepromatous* lesion, which was extirpated. The lesion reappeared at the cicatrice, explained on the ground that the patient had left off treatment, believing he was cured. The authors concluded that this method, far from being advantageous, is harmful. The patients, freed of their lesions, discontinue treatment; on the other hand the slow disappearance of lesions under ordinary treatment leads them to continue taking it. [See especially the comment of Professor Fianza below.]

J. J. Puente and H. Fiol on the other hand, recommended [*Semana méd.* 1 (1935) 117] the extirpation of solitary lesions when they are not situated on the face. The results in the cases which they had treated in this manner had been good, with no relapse.

N. E. Wayson reported [*Arch. Dermat. & Syph.* 36 (1937) 1185-1186] presumable cure by surgical removal of a lesion in the case of a priest, aged 61, who had worked for eight years in the Kalaupapa leper settlement and in whom three typical, small (1 cm.) leprous nodules, bacteriologically positive, had developed on the forehead, which he habitually rubbed with the tips of his fingers when reading. These lesions were removed several weeks after their appearance. Four years had elapsed without the appearance of any further manifestations, and it was suggested that the patient might be cured, though it was too early to regard the cure as permanent.

The replies to our inquiry, which follow, reveal certain interesting differences of opinion concerning this matter.

Reply from Professor Enrique P. Fianza, Rosario, Argentina:

For many years it has been my custom, with a leprosy patient presenting one or two small lesions, to remove them completely by surgical means or to destroy them by electro-coagulation, continuing treatment

later with derivatives of chaulmoogra oil. I was led to do this because of a discussion of a communication made at the first Congrès des Dermatologistes et Syphiligraphistes de Langue française, held in Paris in 1922, by Professor Jaime Peyri on "Leprous chancre." In that discussion Balzer mentioned the fact that twenty years previously Marcano and Wurth had published [*Arch. Méd. exper. et Anat. path.* (1895) No. 1; abstracted in *Centralbl. f. Bakt.* (etc.) I Abt. 18 (1895) 468] the case of a patient who presented only one lesion which was extirpated without any later manifestation of the disease. Some failures discouraged me somewhat; two of my cases relapsed and in other cases in which I destroyed large lesions cicatricial keloids were produced. Consequently I abandoned that method, adopting instead intradermal infiltration with chaulmoogra oil, with which satisfactory results were obtained. I would point out that at that time the lesions were not examined microscopically, and I am inclined to think that the relapses occurred in cases of the lepromatous and not the tuberculoid form. More recently I have employed the method again and in the last five years, during which time invariably all patients were biopsied, I have found that in the tuberculoid form complete destruction followed by medical treatment does not expose the patient to relapse. These cases incline me to believe that in them the disease may have been overcome.

In my opinion the small tuberculoid leprids are local foci of leprosy in which the tissues neutralize the virulence of the bacilli in some cases, and actually destroy them in others, this being the reason why generally bacilli are not encountered in them. I believe that early diagnosis is of capital importance, for a recent tuberculoid lesion is not the same as one which has remained for a year or more unperceived by the patient and therefore not treated. May it not be necessary to decide up to what time a tuberculoid lesion should be considered as *incipient*, and when it must be considered *old*, in order to be able to establish the results of the treatment? May it not be that the older tuberculoid forms, untreated, are those which give the tuberculoid reaction in spite of being treated later?

I believe that the method of extirpation or destruction is advisable, but I should not venture to say that that alone is enough. All of my successful cases have been followed by prolonged treatment because I have not wished to expose my patients to a hazardous experiment which might result in relapse, especially since these patients generally live with their families. It would be very interesting to be able to observe over a long period a number of cases whose lesions have been extirpated without after-treatment, in order to be able to arrive at some practical conclusion. Among my private clientele I have no fewer than six patients who were treated from the beginning and who in the course of 16 years and more have had no recurrence. These facts are worthy of consideration, to be controlled by other experimenters. I consider that it is entirely possible that when the lesions are very recent, there are greater probabilities of cure by energetic measures, and therefore I advise that as soon as the diagnosis is determined extirpation or destruction should be performed. My criterion at present is the following: to all histologically controlled tuberculoid leprids that are small I apply those measures, but when they are large I use the infiltration treatment. In either case the treatment should be continued with preparations of chaulmoogra oil.

From Dr. Nelson Souza Campos, São Paulo, Brazil:

We started observations on this matter after reading a paper on the subject from Argentina, but the cases with one or more lesions in which surgical removal could be expected to be successful have been so few that our experience has been limited to a little more than ten cases, mostly in children in the preventoria. In some instances removal was done in order to diagnose the nature of the lesion, but in others it was done as a therapeutic procedure. In no case has the lesion relapsed or a new one appeared. They were all tuberculoid cases.

In our leprosy dispensaries the following cases have been observed:

(1) I.R., 23 years old, with on the forehead a single, small annular lesion, infiltrated, erythematous, violet-colored. It was biopsied and at the same time specific treatment was begun. No further lesions appeared and the patient is now paroled. Histopathology: tuberculoid leprosy.

(2) M.A., 35 years old, with a single erythematous-hypochromic lesion, anesthetic and almost without infiltration, about 5 cm. in diameter, on the anterior surface of the right thigh. It was removed with broad excision in May, 1933, and there has been no relapse though treatment has been irregular. Histopathology: noncharacteristic infiltration around the glandules; no bacilli found.

(3) M.T., 15 years old, with in the right lumbar region a single macule, anesthetic, erythematous and infiltrated, 4 cm. in diameter. Removed in November, 1933, with broad excision. No relapse or new lesion.

(4) R.B., 5 years old, with only two papuloid lesions, clinically tuberculoid, one under the umbilicus and the other near the trochanter. Biopsied in February, 1934. No new lesion has appeared. Histopathology: tuberculoid leprosy.

(5) J.M., 6 years old, with a single lesion below the trochanter. Biopsied in October, 1936. No new lesion has appeared; no treatment. Histopathology: tuberculoid leprosy.

(6) J.M., 4 years old, with a single, slightly erythematous, oval lesion above the trochanter. Removed in April, 1937. No new lesion; no treatment. Histopathology: tuberculoid leprosy.

Our opinion on the matter is as follows: (a) The results of surgical excision of lesions depend upon their clinical and histological nature. Tuberculoid lesions have no tendency to relapse, and the same can be said of the simple macular ones, without bacilli and with noncharacteristic histological changes. It is advisable to make a broad excision in removing a lesion. Regarding lepromatous lesions, we have no experience with them but because of their nature we believe that they would always relapse and thus that their removal presents no advantage. (b) From the viewpoint of therapeutics, excision presents no advantage for the tuberculoid lesions because of their benignity and the frequency of spontaneous cure, especially in children in whom that eventuality is the rule. With the lesions of any other nature medical treatment could not be abandoned, and by removal of the lesion we would lose the opportunity to watch its evolution, which is the only control of the result of such treatment.

From Dr. J. Lowe, Leprosy Research Department, School of Tropical Medicine, Calcutta:

Replying to your inquiry about the excision of skin lesions, I have prepared a table (Table 1) which gives an analysis of the findings made in 19 cases in which that procedure has been practised as an experimental

measure. In some instances the excised lesion was the only one present; in a few cases there was definite involvement of the nerve (in one of them elsewhere than at the skin lesion); in one case three different lesions were removed from different parts of the body. Most of the excised lesions were definitely active, showing thickening, erythema and recent

TABLE 1.—*Surgical removal of tuberculoid lesions (Calcutta).*

Case	Age	Date of excision and site	Nature and duration of lesion	Bacteriological findings	Observation period	Results
1 GCD	17	5-29-35 Elbow	Flat, tuberculoid; 1 mo.	A few bacilli	36 months	Anaesthesia of scar only
2 PM	38	7-8-37 Breast	Thick, tuberculoid; 4 mos.	Negative	19 months	No relapse
3 TG	21	7-2-36 Elbow	Thick, tuberculoid; 8 mos.	Negative	1½ months	No relapse
4 SS	24	7-25-36 Arm	Sl. thick, tuberculoid; 1 yr.	A few bacilli	31 months	No relapse
5 BKS	27	5-25-37 Elbow	Flat, tuberculoid; 1½ yrs.	Negative	7 months	Anaesthesia of scar only
6 BM	9	9-16-37 Breast	Flat, tuberculoid; 8 mos.	Negative	---	Not reexamined
7 GH	6	2-8-38 Ear	Thick, tuberculoid (thick nerve); 10 mos.	A few bacilli	---	Not reexamined
8 SAM	37	2-8-38 Neck	Thick, tuberculoid; 6 mos.	A few bacilli	12 months	No relapse
9 HMM	33	5-30-38 Buttock, arm, hand	Tuberculoid; 4 months	Negative	8 months	Nothing local; new lesions elsewhere
10 RS	23	5-17-38 Shoulder	Thick, tuberculoid; 6 mos.	Negative	---	Not reexamined
11 GCS	24	5-20-38 Back	Thick, tuberculoid; 5 mos.	Negative	9 months	No relapse
12 KD	35	5-17-38 Back	Sl. thick, tuberculoid; 1 mo.	Negative	6 months	No relapse
13 KNM	26	7-21-38 Upper arm	Sl. thick, tuberculoid; 2 yrs.	Negative	7 months	No relapse
14 BGM	6	7-5-38 Chest	Flat, tuberculoid; 3 mos.	Negative	7 months	No relapse
15 SCD	44	10-18-38 Breast	Thick, tuberculoid; 4 mos.	Negative	4 months	No relapse
16 SS	18	11-26-38 Forearm	Thick, tuberculoid; 3 mos.	Negative	3 months	No relapse
17 B	5	12-8-38 Thigh	Thick, tuberculoid; 2 mos.	Negative	1 month	No relapse
18 T	39	1-4-39 Forearm	Thick, tuberculoid; 3 yrs.	Negative	1 month	No relapse
19 RY	28	8-10-38 Forearm	Thick, tuberculoid (thick nerves); 5 mos.	A few bacilli	6 months	Nothing local; new lesions elsewhere

radial extension. In five of them bacilli were found without difficulty in single sections, and a more careful examination of series of sections would undoubtedly have shown them in others. Some were quite large, up to two inches in diameter, but most of them were between one-half and one inch in diameter.

In most of the cases the period of observation is too short to permit judging the ultimate result of the operation. One might, nevertheless, draw a tentative conclusion that when the lesion is single and there is no nerve involvement locally or elsewhere, removal is not likely to be followed by local recurrence of symptoms or by the development of lesions elsewhere; but that in cases in which the lesions are already multiple, or in which there is already nerve involvement, excision of the existing skin lesions is likely to be followed by the appearance of others. However, it cannot be stated with any certainty that in the cases that have shown no relapse the disease would have increased without operation. I think, therefore, that the procedure is at present only justified as an experimental measure and cannot be recommended as a form of treatment, though our findings seem to indicate clearly that it does no harm, and one might argue that even if it does good in only a small percentage of cases it is justified.

From Dr. G. A. Ryrie, Sungei Buloh Leper Settlement, Selangor, F.M.S.

I have observed a number of cases in which the original solitary leprid has been burnt away with acid, leaving deep scarring, without however preventing the gradual spread of the lesion. In one case at present under my care the original lesion on the right shoulder was so treated, according to the history, sixteen years ago, with a deep scar resulting. The lesion reappeared along the outside of the scar, and has since spread over half of the trunk. I have only one personal experience of surgical extirpation of neural-tuberculoid lesions. Fifteen months ago a Malay adult male asked me to remove three such areas on the fingers of his left hand, the only ones present. The ulnar nerve was considerably thickened and the hand wasted, with moderate immobility of the phalangeal joints. I advised against the operation but yielded under pressure by the patient. In eight months the lesion areas became bluish, with ill-defined edges, and the bacteriological content rose from \pm to $++$. After repeated intradermal treatment the lesions have now gone back to \pm again. I record the case without comment.

There is considerable evidence that tissue trauma such as is inevitable in surgery may predispose the site of election for the location of a later leprotic lesion. I have seen many cases in which the primary leprid appeared at the site of previous injury, which would suggest that surgical interference may not be a procedure wholly devoid of risk. Theoretically the advisability of surgical removal of a leprid would appear to depend on our concept of the pathological processes involved. If the early leprid is a localized response to the presence of undissemminated bacilli, then early treatment with the knife would be as urgent and as desirable as in carcinoma. If, however, the lesion is the first external evidence of systemic involvement, then obviously surgical interference is as futile as an attempt to treat typhoid by shaving off the first rash. In this connection it is

obvious that the primary skin lepid is not a sign of purely localized leprosy, as it may follow prolonged nerve involvement. On this somewhat limited analysis I should not consider that there is sufficient justification for any large scale experiments in surgical removal of early leprides.

From Dr. P. H. J. Lampe, Queen Wilhelmina Institute for Leprosy Research, Batavia:

In answer to your question I can only refer to the following case. A nine-month old child of a leprosy mother had on the face a single tubercloid lesion in which a few bacilli could be demonstrated in some 20 sections. I removed this single lesion approximately three years ago and in July, 1939, there was no other sign of leprosy to be seen. In my opinion it is justified to abstain from other treatment in a certain number of such cases, but it would be necessary to remove them from infected surroundings to exclude reinfection as far as possible.

Dr. L. W. M. Lobel, of the same institution, in the absence of Dr. Lampe wrote of the case mentioned and added: A second case occurred about five months ago in a man aged 25 years with a solitary, nonlepromatous lesion at the left elbow, bacteriologically negative in smears. This lesion was removed completely but the time is too short to say anything about the results. From these two cases it will be seen that the matter already has our attention. We will follow these cases and occasionally add more if suitable ones are seen.

From Dr. H. K. Giffen, American Mission Hospital, Assiut, Egypt:

With reference to your observation concerning solitary, bacteriologically negative lepridic lesions, I am struck with the difficulty of ascertaining with certainty the etiology of such lesions, since the histological picture varies and simulates other conditions. I also think of certain cases showing early leprids when the lesion on one side is not infrequently followed by one on the opposite side in a similar location. In our clinic we have not observed a well defined lepid which has failed to return following biopsy. Our limited experience would make us incline toward this being an accidental finding. We shall keep the matter in mind in future studies.

From Dr. F. Hayashi, Kei-ai-en National Leprosarium, Kagoshima, Japan:

I have no experience with the excision of primary leprosy eruptions. However, we not infrequently see lepers with very old faint macules in which sensation is almost normal. Most of the patients say that these lesions appeared many (sometimes as long as 30 or 40) years before and faded, remaining without further activity. Some of these patients married and have had children. If their lesions had been excised at the beginning, there would be now nothing to diagnose as leprosy. Of course it is not certain that there are no bacilli in the skin outside of such a lesion, or in the nerves. I feel that local excision could not be expected to be a very effective method of preventing the progression of the disease. Cases in which that is done that remain cured might be cured even without the excision. This opinion is based in part upon autopsy findings. In short, I do not believe in the radical effect of local excision, but I do think it worthwhile to try it in such cases. (I think that Dr. Mitsuda's opinion is the same as mine.)

From Dr. A. Dubois, Institut de Médecine tropicale Prince Léopold, Anvers, Belgium:

I have no experience of complete surgical removal of solitary leprids, but I believe it would be of scientific and practical interest to perform the experiment in some patients. As you rightly say, it would also be necessary to have a control series without excision or any treatment. According to my experience in Africa there is a certain percentage of non-evolutive or regressive leprids, and this fact would make the interpretation of the results of such an investigation difficult unless there should be a statistically significant difference between the two series of cases.

From Dr. R. G. Cochrane, Lady Willingdon Settlement, Chingleput, Madras, India:

My position with regard to the early leprids in leprosy is this: In children, the solitary lepid or one or two small lesions are probably of no significance, for they frequently become quiescent without any treatment at all. We have some 470 children on our rolls at Saidapet and among them is a large number with the variety of lesion in question, and we are seeing a great majority of them gradually clear up without treatment. I am personally of opinion—this may be modified after some years, of course—that at least 50 percent of all lesions of this type in children clear up or disappear completely before adult life is reached. It is impossible in the case of a single lepid to decide whether the infection is localized in its area or whether it is a manifestation of some focus elsewhere. To my mind it is not important, and I have not been able to persuade myself that it is worthwhile to remove such lesions surgically. I have done it in one case, but only because of unusual circumstances of the individual's employment. I think it is most important to realize that many of the early neural-type lesions of leprosy are benign and do not tend to pass into the more serious forms. We think we have a good deal of evidence in favor of this conclusion, but we are not yet in a position to publish it.

[With regard to this last communication, it may be added that certain workers in the Philippines, and also in Brazil as indicated by Dr. Nelson Souza Campos, who are dealing with children born of leprosy parents are simply keeping them under observation and see many single lesions disappear more or less completely; usually if not always they are of tubercloid nature but not infrequently bacteriologically positive for a time. How permanent the recession is in such cases cannot, of course, be told for many years to come.—EDITOR]