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**ABSTRACT-** WADE and RODRIGUES reported a leprosy case who was followed up during a period of eight years (1932-1940). Initially the patient was thought to be a minor tuberculoid that evolved rapidly and transformed into a major tuberculoid form. After a period of almost two years without manifestation of the disease he presented new and more severe reactional episodes which later become bullous. The case was considered borderline by its evolution, features of the lesions and bacterial findings.

The author considered this case as a reactional one since the beginning and commented also its evolution and clinical and bacteriological aspects. He called attention to the regression of the lesions and the disappearance of bacilli without therapeutic influence and later the occurrence of new outbreaks and reappearance of bacilli, even after a large period of time.

This report permitted to elaborate an hypothesis in which the bacilli in reactional borderline cases disappear in most part due to the action of the immune system of the host in contrast with reactional tuberculoid cases in which there is a total destruction of bacilli, therefore, the new outbreaks are caused by multiplication of persisters. Confirmation of this hypothesis could have therapeutic implications. MDT/ WHO would be unable to prevent new reactional episodes since the bacterial multiplication occurs out of the period of drug activity. If so, reversal reaction that occur after treatment could actually be a relapse and the best option for the treatment would be to give drugs every day or in short intervals until the appearance of a new acute episode.

The author also emphasize the amount of knowledge one can acquire with the study of well documented cases reported by early researchers.

**Key words:** reversal reaction, relapse, therapeutics.

## 1. INTRODUCTION

Nowadays the description of cases in leprosy are for the most part incomplete or they are substituted by numbers.

This is due to a general awareness that the clinical picture of leprosy is well established and there is nothing more do be added to it. But there are yet many disagreements among the clinical findings and some laboratorial tests and

therapeutic results.

The history of the evolution of the knowledge about leprosy is being set aside and the tremendous efforts made by so many researchers are losing in the haze of the past.

JADASSOHN (1905)<sup>6</sup> for the first time described the form of leprosy which has now come to be described as tuberculoid. Darier<sup>3</sup> followed this line of thought further and used the term "tuberculoid" in relation to it. In spite of the

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International Leprosy Conference of Strasbourg (1923)<sup>2</sup> has specially called attention to this topic was Wade who heightened the studies about this clinical form of leprosy, describing its pathology, the tuberculoid reaction and the major tuberculoid. Later Wade and Rodrigues introduced the concept of borderline, studying patients which were different of tuberculoid cases taking into consideration the clinical aspects of its lesions and different evolution.

Unfortunately, the interpretation on these clinical conditions evolved in many ways and some facts that we know nowadays are based probably in erroneous interpretations. Therefore there is a risk of a crumbling of our knowledgments which will be able of to affect the treatment of the patients.

Therefore we are presenting and discussing a case reported by Wade and Rodrigues in the years 30' with the purpose of highlight this issue.

## 2. DESCRIPTION OH THE CASE

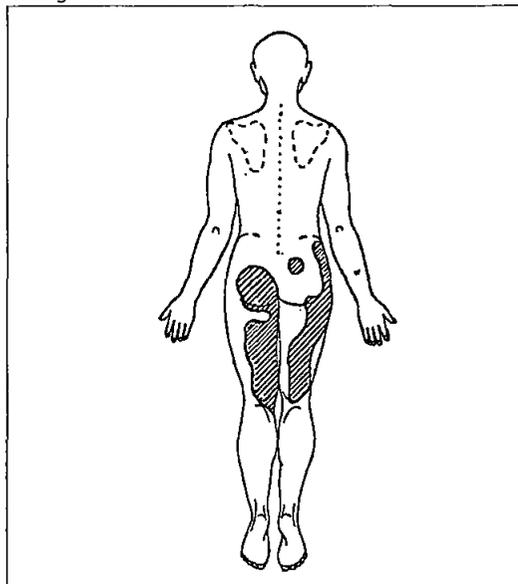
**"FIRST PHASE** - This patient, T.C., a male Filipino, then 20 years old, was encountered in September, 1933, during a survey of the population of Cordova, Cebu. About 18 months previously a small (1 cm.) raised reddish area had appeared on the left buttock. It enlarged rapidly, and when it was about 3 cm. in diameter the center became pale and receded, leaving a typical annular minor tuberculoid lesion. A similar one soon speared on the right buttock.

These lesions spread so rapidly that at the time of examination they covered extensive areas of both thighs to the popliteal spaces, the right one extending upward onto the hip (fig. 1). The borders of these areas were in places infiltrated and pinkish, and centrally they were entirely anesthetic to touch, pain and temperature. Smears from the elevated margins in two places were positive, bacilli numerous (3+); the nasal septum was negative. The case was classified at the time as moderately advanced cutaneous type leprosy.

**Biopsy:** margin of the buttock lesion. Histopathology: tuberculoid, active and rather marked. Numerous tuberculoid foci, more or less

conglomerate, mostly in the papillary layer. Smaller foci in the reticular layer, but none in tus lower half. Bacilli found, in places numerous.

This case was undoubtedly of the minor tuberculoid variety from the outset, and the condition progressed with extraordinary rapidity. In connection with that fact, the positive bacteriological findings at the time of examination may be significant. No history has been obtained suggestive of a reaction condition to which the findings could be attributed.



**Fig. 1** - Diagram of Case 2, showing roughly the location and extent of the marginate minor tuberculoid lesions - including the recovered areas - at the time of first examination In September, 1933, supposedly about 18 months after onset. (As drawn by Dr. R. S. Guinto at Cordova; but see Fig. 2 with reference to distnbution on left thigh).

*Diagrama do caso mostrando grosseiramente a localização e extensão das lesões marginadas tuberculoide minor incluindo as áreas regressivas na época do 1º exame em setembro de 1933, 18 meses após o provável início (como desenhado pelo Dr. R.S. Guinto em Córdoba; mas veja Fig. 2 com referência à distribuição na coxa esquerda.*

**SECOND PHASE** - Six months later (March, 1934) the patient presented himself at the dispensary in Cebu in bad condition. In December, shortly after attending a town "fiesta", he had an acute reaction with fever and was bedridden for about two months, losing 16 lbs. in weight. The attack started with feverforten days, accompanied

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and followed by the appearance of new erythematous and elevated lesions on the face, earlobe, arms and thighs anteriorly. Contracture of the fingers began during the period.

When examined the greater part of the macules seen previously - then largely inactive to residual - were involved in the flare-up; and they, together with the many new ones, constituted extensive infiltrated patches and gyrate areas and bands on the forearms and thighs, the last forming irregular bands extending down on the right leg (Fig. 2). The areas on the arms were especially marked, raised and red. Penis affected. A patch on the forehead extended to both upper lids. Left earlobe contained a nodule, left cheek red. Nasal septum ulcerations, both sides. Bilateral orbicularis oculi paralysis. Ulnar nerves much thickened, especially the right; peroneals slightly enlarged. Atrophy to both hands, especially right, with quite marked contracture of fingers and some absorption of right index and middle fingers; anesthesia of right hand to wrist, right foot to ankle, left foot and

leg to knee; perforating plantar ulcer, left. Smear from left earlobe positive (2+). It being assumed that the lesions were now lepromatous, the patient was admitted to the leprosarium classified as C2-N2, later to be transferred to the Cullion Leper Colony.

Though no histological examination was made at the time it is beyond doubt that the development that occurred during the febrile, reaction period was a conversion of the previously minor tuberculoid condition to the major form, with marked exacerbation of the disease as a whole. The rapidity of development of polyneuritic manifestations is decidedly unusual.

**THIRD PHASE** - Retrogression of the reaction condition was rapid and at Cullion four months later (July, 1934) there were, besides the trophic changes, only pale thickened macules on the arms and forearms, similar but uninfiltated areas on the right scapular region, buttocks and lower extremities, and slight infiltrations of earlobes and cheeks. After another three months (ten months after the reaction occurred), with the clinical condition still more retrogressive, the patient was once found bacteriologically negative. In a reexamination, however, positive smears (1+ and 2+) were obtained from two of the numerous sites examined, and sixteen months later the same places were again positive (1+) though ten others were negative. In the meantime the macules had in general continued to clear up, so that when examined in connection with this study in September, 1936, little was to be seen but residual changes aside from the sequelae of nerve involvement, and some to the areas shown in the 1934 diagram were quite indistinguishable. The patient was paroled in March, 1937, having repeatedly been found negative over a period of about nine months.

Clinical subsidence of the lesions was rapid, as could only happen with tuberculoid leprids, and ultimately many of them quite disappeared. Again as in such leprids, bacilli quickly became difficult to find, though a few were encountered from time to time after all clinical evidence of activity had disappeared, and parole was delayed thereby.

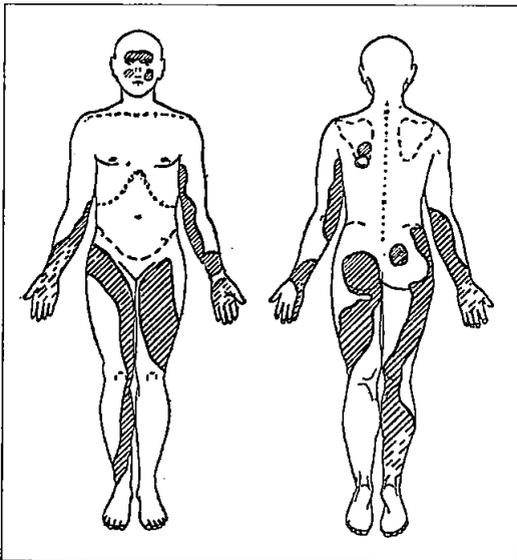


Fig. 2- Diagram showing roughly the location and extend of the lesions, now of major tuberculoid grade, when Case 2 was hospitalized In March, 1934. (As sketched by Dr. J. G. Tolentino, at the Eversley Childs Treatment Station).

*Diagrama mostrando grosseiramente a localização e extensão das lesões, agora de grau tuberculóide major quando o caso foi hospitalizado em março de 1934. (como desenhado pelo Dr. J.G. Tolentino no °Eversley Childs Treatment Station).*

**RELAPSE PHASE**-Seen at Cordova in September, 1938, eighteen months after parole, the patient had suffered an abrupt relapse, and extensive new lesions had appeared. Three weeks previously a large boil had developed over the left knee, accompanied by high fever, headache and chills, and on the third day large red areas bloomed forth and evolved rapidly. Previous to that time, he asserted, there had been no manifestations since he left Culion. The lesions consisted of widely distributed acute, erythematous patches, more or less elevated and rather rough-surfaced, a few of them small but other very extensive. Their distribution is shown in Fig. 3.

On the right side a vast area extended from above the iliac crest down over the buttock onto the posterior and medial surfaces of the thigh, nearly to the popliteal fossa. It did not extend around onto the anterior surface, but there, in the inguinal region, were two small but prominent isolated patches. Central over the buttock, and also externally on the right hip and from there down over the thigh posteriorly, were areas of

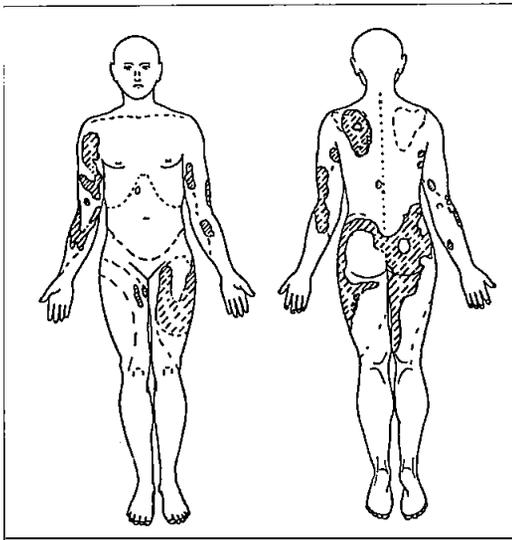


Fig. 3 - Diagram of the lesions of the relapse phase of the disease, In September, 1938, showing their intimate relation to but usual avoidance of areas affected previously.

*Diagrama das lesões da fase da recidiva da doença em setembro de 1938, mostrando sua rola pão íntima, mas com o usual não comprometimento das áreas afetadas previamente.*

quite normal-speering of slightly hypopigmented skin against which the infiltration terminated abruptly. These areas were the sites of major tubercloid plaques in the previous active phase of the disease.

On the left side the buttock area, previously affected but now not participating, was surrounded over fully three-quarters of its circumference by a prominent active lesion that extended from the hip region upward and inward as a rather narrow zone limited at about the iliac crest, and just below the gluteal fold extended medially as a narrow but particularly elevated peninsula. This lesion area, also to be described as vast, covered almost the entire hip and extended downward over the external and latero-posterior surfaces of the thigh to the knee; anteriorly it turned upward to the inguinal region. At its lower limit toward the knee it shaded off gradually and became indistinct.

There were similar though less extensive patches of irregular shapes anteriorly on the right arm and posteriorly on the left one. Anteriorly on the right forearm two prominent bands converged to meet below the cubital space, at which point the infiltration was relatively slight. On the upper arm was another very irregular lesion, roughly S-shaped, almost separated into two by a zone that was only slightly infiltrated (more prominent when photographed later). The large one on the left arm was less irregular. These lesions, too, were all diffused in parts of their peripheries, but abruptly marginate in other parts where they adjoined previously affected immune areas. Another fairly large lesion was in the left scapular area, and speering as a sunken island in it was a rounded "immune" area. Along the lower and medial edges of the lesion were two distinct, prominent patches, and above them a less prominent one; elsewhere the active condition was less conspicuous, tending to merge off into the normal skin. There were a few relatively small lesions elsewhere on the back, but only one was found on the anterior surface.

Other features noted were contracture and deformity of the hands, affecting all of the fingers, with marked atrophy and some deformities of both members, more on the right side than the left. The ulnar nerves were only moderately thickened, however; the right peroneal was

markedly so. Smears (buttocks): 2+ and 3+.

**Biopsies:** (a) from the upper edge of the lesion zone above the left buttock, to include lesion and normal skin (it was found later that the surgeon failed to include any of the actual lesion); and (b) the lower edge of that zone, including lesion and the normal-looking immune skin. Smears from sites positive, 1+ and 2+. Histology: In a part of specimen (b) is a rather marked granuloma, mostly in the superficial zone, relatively little deeper, lowest levels not affected. The elongate character of the essential cells, and the penetration of the masses everywhere by fine, irregular strands of collagenous material, led to a diagnosis of nonfoamy leproma, and it is still impossible to characterize it otherwise. Bacilli here were found to be very numerous (3+). The part that came from the central, immune area shows certain residual changes, by far the most prominent being fibrosis of the subpapillary layer. Specimen (b), actually taken from the unaffected skin, shows very slight round-cell infiltration at a few points, mostly in the sub-papillary layer. Unexpectedly, bacilli were fairly numerous (2+).

**Subsequent course** - The patient was reexamined for us about two months later by Dr. R. S. Guinto. From photographs made then (the first lot had proved unsatisfactory) it is evident that over much of their less infiltrated parts the lesions had undergone some recession. Smears: seven from skin areas, including earlobes, all positive, 1+ to 3+; nasal septum, 4+.

**Condition on admission** (December 1, 1938) - Two months after the relapse there had been some recession of the lesions, and at the time of recording (Dr. J. G. Tolentino) that for the most part the areas were bluish-red and flat or only slightly elevated. Within their boundaries, however, though usually not coextensive with them, there were reactivated areas, bright red, thick and elevated, and lesions of similar character had also appeared in other places. There were now rather extensive ones on the face, which had been involved in the major tuberculoid phase. The ears were markedly involved, having much the appearance that would be expected in a rather advanced lepromatous case. On the extremities there was, it seems, a considerable extension of the affected areas, while completely new, relatively

small ones had appeared on the trunk, front and back, on the palms, and perhaps elsewhere. Blebs were present on some lesions. A second reaction had occurred before the first one had completely subsided and all active areas, both the new ones and those within the older ones, were regarded as of the second reaction.

**Other findings:** Marked enlargement and induration of the ulnar and great auricular nerves and thickening of the common peroneals. Trophic changes: paralysis of eyelids, left side more affected than right; atrophy and paralysis of both hands, with contracture of all fingers and slight deformities of the left hand and rather marked of the right; paralysis of the right foot, with plantar ulcers of the right big toe and ball of left foot. Lymph nodes: inguinals and femorals enlarged, cervicals, axillaries and epitrochlears not. A smear (right cheek) was strongly positive (4+). Diagnosis: Nt3 - major tuberculoid in reaction.

**Reaction with ulceration** - Regarding the condition of primary interest here, the following history has been obtained from the patient himself and others associated with him.

After admission the patient was put under the usual chaulmoogra treatment and, after about five injections, all of the elevated, active lesions became more acutely reddened and thicker, and the patient developed high fever with chills. All of these reacting lesions except those on the face acquired large blisters, or bullae. Each lesion had one; it was not a matter of groups of small ones running together. Each blister spread rapidly until the whole lesion was covered.

The content of these bullae was at first clear but in many, especially the smaller ones, it became cloudy, almost purulent. The larger ones of them ruptured, and for some days they gave off an oozing serous discharge. Those that did not rupture gradually dried up, forming crusts, beneath which there were shallow ulcerations. At no time was there any sloughing; the ulcers healed with more or less scarring. Altogether, the duration of this condition, from the appearance of the blisters to the complete healing of the ulcers, seems to have been about two months. No special local treatment was applied. Antileprosy treatment was of course interrupted during this period.

**Reexaminations, 1939** - Three special

reexaminations were made, one in June by Dr. Tolentino at our request, the others by us in August and October. On the first occasion it was noted that the lesions of the face and ears had subsided completely and were hardly noticeable. Those of the trunk and extremities were either flat or depressed, some pale and others pale pink in color, with dark, irregular scars left by the superimposing lesions. Smears: four negative, one positive (1+).

We, later, found no sign of activity. The face was free from infiltration, the earlobes very thin and slightly wrinkled. The sites of the previous extensive lesions now showed scars, of three degrees: (a) Pigmented scars, partly atrophic and partly keloidal, over the sites of the thickest portions of the affected areas on the backs of both arms and back of right thigh. (b) Atrophic leucodermic scars on the less infiltrated patches on the front and the lateral side of the left thigh, the inner side of the right thigh, the left buttock and the left scapula; also scattered spots on the chest and back. These leucodermic scars were surrounded by irregular areas of hyperpigmentation, and many of them showed pigmented spots within the leucodermic areas, apparently at the sites of the hair follicles. (c) The least infiltrated areas showed only hyperpigmentation, with irregular pigmented areas within; these scars were seen on the left scapula, the inner surfaces of both arms, and the chest.<sup>1</sup>

Biopsy: specimen from the left hip, including both scar and normal skin. Histology: An inactive, residual lesion, with a broad band of rather delicate-fibered scar tissue superficially and only very slight infiltrative changes elsewhere, at wide intervals. Usually only a small collection of round cells, both large and small, in the usual locations, but at one or two points in each section a tiny, "subtubercloid" group of epithelioid cells. One deeply-placed nerve, in contact with the subcutis, is more markedly affected, with definite though small

tubercloid foci. There remains, therefore, a residuum of the lesion-process, now definitely tubercloid.

The picture seen at this time was that of one of those rare cases of acute tubercloid reaction leading to extensive scar formation, suggestive of the so-called lazarine leprosy".

### 3. COMMENTS

In the thirties Wade and Rodrigues reported a very interesting case which was carefully followed up<sup>10,16,17</sup>. The case is not unique since we have been seeing many other such as this, but the fact that it has been described in the 30's make it particularly important. The treatment with chalmogra oil probably did not intervene in its evolution. The authors themselves mention that "Treatment cannot be held solely responsible for the recession in our patients, for it is well known that in many such cases similar improvement takes place without treatment. At most we can only believe that medication may hasten improvement, and perhaps help to make it permanent".

Therefore we can see in this case the real natural history of the disease.

The authors divided the study of the patient in phases. In the first phase they considered that initially it was of the minor tubercloid variety, but called attention to the extraordinary rapidity of its progression and also to the positive smears.

However, the abrupt appearance of an erythematous and elevated lesion suggest, in our opinion, a initial reactional lesion that through a new reactional episode rapidly increased in size at the same time that a new lesion appear on the right buttock. Eighteen months later (September of 1933) the lesions had rapidly increased exhibiting a pink and elevated border in which the smears were positive. In our opinion, regardless

<sup>1</sup>While this report was in press it was learned (Dr. Tolentino, May, 1940) that six monthly bacteriological and clinical reexaminations were made by the local examining committee and the general disposal committee between September, 1939, and March, 1940. During that period the patient was in a quiescent state, with negative bacteriological findings in previously positive areas. The sites of the former red lesions showed merely brownish pigmentation, and the nasal septum was normal in appearance. However, at the last examination, made in April, 1940, the pale brown macules on the right chest, back of left arm, left wrist, and both buttocks showed suspicious signs of activity, and smears taken from these sites were found positive (from 1+ to 3+). It is possible that this is the onset of another phase of reaction.

OPROMOLLA, D.V.A. Some comments about a case reported by Wade and Rodrigues in the 30's.

the authors statement that " ...no history has been obtained suggestive of a reactional condition to which the findings would be attributed", the description presented and the fact that the lesions showed inactivity and regressive appearance six months after the onset, by no means characterize a minor tuberculoid case with chronic evolution.

Presently, we consider as a torpid tuberculoid the lesion presenting a granular and infiltrated border with a chestnut color and as a reactional lesion the one which is elevated, erythematous and presenting a smooth surface (Fig. 4 and 5).

In the second phase, the authors were confident that a conversion of the previously minor tuberculoid condition was occurring to a major form and they called attention to the unusual rapidity in the development of polyneuritic manifestations.

In our opinion this case is a reactional one from its very beginning and the neural involvement is due to reactional episodes that were progressively more intense.

In many instances reactional cases are very similar and since they were first described they were labeled as major tuberculoid according to Wade<sup>1</sup> or as reactional tuberculoid according to South American authors<sup>12,13,14</sup>.

However, early enough researchers noted that there were some differences among these cases regarding their evolution, the results of Mitsuda tests or the bacteriological findings.

COCHRANE<sup>1</sup>, for example, did not admitted that reactional tuberculoid cases could exhibit negative Mitsuda test. He considered these cases as Intermediates. SOUZA LIMA and SOUZA CAMPOS<sup>5</sup> also considered their reactional tuberculoid cases with a Mitsuda test weakly positive or negative to be prone to become lepromatous.

It is beyond doubt that WADE and RODRIGUES<sup>1</sup> were the first to call the attention for the borderline patients taking into consideration the report of the case under discussion and many others which exhibited distinct clinical and evolutionary features, in contrast to what was known at that time.

We would like also to make some comments on a misunderstanding that do exist between English speaking and Latin American workers. During the discussion of this case, WADE and RODRIGUES state that the development that occurred during the febrile reaction was a conversion of the previously minor tuberculoid to the major form. Therefore, they considered the major tuberculoid case as a chronic one similar to a minor tuberculoid case, which could present reactional episodes.

On the other hand SOUZA LIMA<sup>5,11,12</sup> and other authors considered the major tuberculoid and the reactional tuberculoid cases as being the same thing. For this reason they continued to call reactional the lesions that appeared during the acute episode. These lesions have a protracted



**Fig. 4** - Chronic tuberculoid lesion.  
Lesão tuberculoide crônica.



**Fig. 5** - Reactional tuberculoid lesion.  
Lesão tuberculoide reacional.

regression, become darker, with a slow diminution of their infiltration and sometimes their central area become flattened and the lesions present a annular pattern. When there is a more rapid regression the lesions may present scales in its surface. In all these regressing phases the lesions continue to be considered as reactional due to the fact that they initially had appeared abruptly.

The Latin American<sup>5,12,14</sup> workers admitted also that a tuberculoid case with a chronic evolution may convert to a reactional form, but the chronic lesions that became acute or the new lesions will be also called reactional while the reaction do not regress entirely. Therefore, many cases considered BT nowadays, are indeed major tuberculoid (reactional tuberculoid) cases, reactional borderline cases very similar to reactional tuberculoid, and other cases that have a chronic evolution which may be sometimes prone to show a type 1 reaction.

Coming back to the case under discussion we saw that the authors for the first time called attention to the lesions they denominated tuberculoid relapse lesions, that would be the abrupt and conspicuous margination around - or against - the areas which had been affected by the previous active phase of the disease, which did not participate in the new activity. However, we have the impression that these lesions correspond to a progression of the disease from the boundary of the area apparently inactive and they are noteworthy as they confer an odd feature to skin of some patients.

The authors considered that the disappearance of the lesions is characteristic of cases with tuberculoid reaction but in the case under discussion it is interesting to note the number of reactional episodes and the interval among them. They considered that this case had become a special one when it presented a new acute phase after 2 years of showing no manifestations of the disease (Graphic 1).

More interesting in this case was the disappearance of bacilli whereas the lesions were regressing and its reappearance during the occurrence of a new outbreak.

Discussing the relapse lesion in this case, the authors considered that the clinical findings *"leads to the thought, wholly unorthodox*

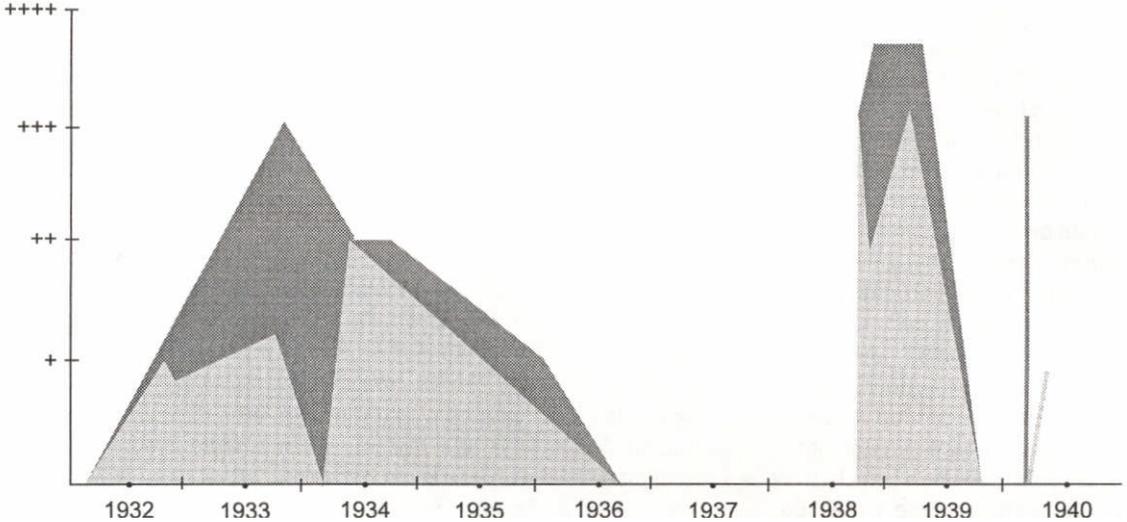
*and paradoxical, that the infecting agent may somehow have been harbored in those supposedly recover areas- unless it be that the previous infection had made the neighboring tissue specially susceptible to involvement when that agent was again disseminated from wherever it may lain dormant".* Thereafter they say *"We do not advance either of these speculations as an opinion, but it seems not unreasonable to expect that the explanation of so unusual a condition will itself be unusual"*.

Therefore, we take also the liberty to make some speculations about the observations in this case. To our understanding, this patient was borderline since the very beginning and presented acute episodes progressively more intense with the appearance of new lesions until the latter became bullous. This case is different of a tuberculoid case (reactional or not) which are prone to a spontaneous resolution and show negative or weakly positive smears. It continued exhibiting acute episodes and the bacilli disappeared when the reaction subsided. When a new reactional episode occurred the bacilli reappeared again. This case portray the borderline cases we see today with some frequency in which the smears are positive, the Mitsuda test is negative or weakly positive and reactional phenomena occur many times with variable intervals but never leading to a transformation to other clinical form. The case reported by WADE and RODRIGUES has not evolved to a lepromatous form after a follow up of more than eight years.

On the other hand the repetition of acute episodes and reappearance of bacilli seems to show a balance among the defensive forces of the body and bacterial multiplication. Probably the bacilli remain in a dormant state (persists) and when they multiply again they are destroyed mostly by the immune system of the hosts. Additionally, we referred that there could be consecutive reactions after variable periods in which the bacteria remain (metabolically) inactive, in contrast to what happen in reactional tuberculoid cases in which the bacilli are definitely eliminated and the patient suffer at most a second reactional episode.

Therefore the acute episodes would consist in a hypersensitivity reaction triggered by antigens released during the destruction by the

**Graphic 1 - Evolution of case T.C. (by Wade and Rodrigues).**  
**Evolução do caso T.C. (por Wade e Rodrigues).**



*Intensity of reactional episodes and bacilloscopy in crosses (+ = discrete, ++ = moderate, +++ = severe, +++++ = more severe).* Intensidade do surto e intensidade da baciloscopia em cruces (+ = discreto, ++ = moderado, +++ = intenso, +++++ = muito intenso).

■ Bacilloscopy (Baciloscopia)

■ Reactional episodes (Episódios reacionais)

immune system of bacteria that started to multiply again<sup>8</sup>.

If the suppositions are true and if we take into consideration also the variability of the periods among the acute episodes, all this will have therapeutic implications which should be carefully analyzed.

It is possible that there is no need to treat true tubercuoid cases but in cases such as the ones studied by WADE and RODRIGUES there will a need for effective drugs that must be given in order to "help" the body to destroy the bacilli when they come back to multiply. This means that the treatment must continue in a daily basis or with short intervals until the occurrence of a new reactional episode, so that there will be a chance to really destroy all the bacilli.

On the other hand, one should remember

that drugs take some time to start their action and may not be effective depending on the time of multiplication of the infectious agent<sup>11</sup>. Problems may occur also with bacteriostatic drugs. In the case of sulphone and *M.leprae* for instance, if the bacilli have a sufficient load of PABA they can multiply and there will be the occurrence of a new acute episode without drug intervention<sup>15</sup>.

It is possible that this is what happens during MDT treatment when PB patients ingest Rifampicin once monthly and Dapsone daily during six months<sup>9</sup>. As we could see in the case under discussion, the intervals among the acute episodes are variable and if the bacillary multiplication occur during a period out of rifampicin administration then patients may present reaction during the treatment and even afterward. The same applies to MB patients but probably in a

small proportion.

This would explain also those PB cases with one or few hypochromic macules that exhibit a reactional episode at the end of treatment or even after its conclusion.

Therefore we are dealing with a reversal reaction which in fact is a relapse. Therefore, another contribution based on these ideas is that reversal reaction and relapse are the same thing'.

The case reported by WADE and RODRIGUES contain many information. We have yet much to learn with these early researchers that registered very well the evolution of leprosy in their patients and that with their skill, efficiency and determination left to us important contributions for a better understanding of this disease.

*ACKNOWLEDGMENTS: our acknowledge to Dr. Robert C. Hastings, editor to the International Journal of Leprosy and other Mycobacterial Diseases, who give us permission to describe and discuss the follow up of this case reported by WADE and RODRIGUES, published in the following issues: Mt. J.Lep 2(3): 279-291.august-oct, 1934.; InLJ.Lep 7(3): 327-340, 1939 and Int.J.Lep. 8(3):333-344, 1940.*

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