INTRADERMAL ADMINISTRATION OF PROMIN [1]

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In the latter part of April of the present year (1948) we started to apply promin (40 per cent solution) directly into certain kinds of lepromatous lesions which, for more than a year, had shown a tenacious resistance to the action of that drug when given intravenously. Only nodules located on the ears and those which form the conglomerate of the lower half of the nose have been subjected to these injections. The results obtained in 30 patients, within 80 days, have been encouraging.

Technique of the injections.—A 5 cc. syringe is used in order to obtain a firm grip for the effort which, in many instances, has to be made to overcome the resistance to the penetration of the solution offered by certain nodules, particularly the conglomerate ones of the nose. A short and short-bevelled needle, of sufficiently large caliber, is introduced to approximately the center of the nodule, thus avoiding the necessity of making two or more punctures which would allow the injected liquid to escape. Care is exercised that the needle shall contain no drop of promin solution at the point, for that would cause blistering at the point of introduction. The site of the injection should be covered with a small piece of gauze which the patient himself can hold, in order to avoid the slight hemorrhage which may occur and to prevent the solution from escaping, as well as to avoid possible infection.

When treating an earlobe a rupture of the skin may occur, usually—because it is thinner and softer there—on the inner surface, where the resulting scar cannot be seen. Nevertheless, it is advisable to make the injection at the innermost location along the borders of the lobe, so that if rupture occurs the resulting scar will be at least partially hidden. The injection should be made slowly, in order to minimize the chances of abrupt rupture. In women we encounter the inconvenience of the perforations which, by custom, are made in the earlobes in childhood, and which allow the injected liquid to escape.

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[1] This report as published is based on an English translation supplied, at the request of the author, by Mr. Eduardo Castañe, of Parke, Davis International, New York City.—EDITOR.

The quantity of promin that should be injected depends on the size of the individual nodule, but only exceptionally have we given more that 0.5 cc. at any one point. The rule has been followed that the total amount injected into the nodules and intravenously, when that combination of routes is employed, should not exceed 12.5 cc., the maximum recommended daily dose. The injection is not repeated until after the local reaction resulting from the previous one has disappeared, which usually occurs after four or five days. The injections are, however, spaced at intervals of seven or eight days when many of them are to be made.

Effects of the injection.—The injection of promin solution directly into the nodule usually causes it to soften and perhaps simultaneously to decrease in size, and it may remain in that condition for an as yet undetermined length of time. Exceptionally these changes become gradually accentuated after each injection until the lesion totally disappears.

More commonly the nodule, after having softened, is destroyed through the expulsion of its contents. In some cases the surface becomes necrotic and breaks down spontaneously; the material which is expelled is generally of a blackish-red bloody appearance and contains some grumous substance. The resulting ulceration is sometimes superficial; sometimes it is deep and shows a reddish center and ragged borders, but it cicatrizes rapidly.

Oftentimes palpation is required to determine the presence of broken-down matter in the nodule, and puncture with a large caliber needle facilitates its evacuation. Here, again, when an earlobe is involved the puncture should be made on the inner surface, so that the scar will not be seen. On rare occasions the presence of an accumulation has been revealed at the time of a new injection, by way of bloody material entering the syringe.

The contents of a nodule may not be completely expelled by the first puncture, in which case further injections and ruptures or punctures are required to complete its destruction. In all cases involving rupture the expulsion is facilitated by light and sustained manual pressure, applied not only to the nodule itself but also to the surrounding tissues. The destruction of the nodule is accomplished, as we understand it, through the direct therapeutic action of promin on the lepromatous tissue, helped by the disorganization which the caustic action of the drug has on the tissues in general.

Usually the spontaneous necrotic ruptures are those which cause the deepest ulcerations; and these in turn result in

relatively extensive and deep scars which, depending on their location, may be unesthetic. It is advisable that rupture should not occur before the second injection, for experience has shown that if it occurs prematurely a greater number of injections is necessary, and in consequence multiple scars are formed.

Small, fine scars disappear with time or become hardly noticeable. As for the more extensive and deeper ones, some of them are not visible because of their location, and others become corrected with time; only in a few cases can they be considered as having an unesthetic appearance. The macules which sometimes remain after the nodules are destroyed lessen in a short time and usually disappear completely.

The number of injections required to complete the destruction of a nodule varies with different patients and with different lesions in the same patient. Whereas some regular-sized nodules have required only two injections, some smaller ones have required several. Usually, however, the nodules located in the earlobes are more readily destroyed than those on the border of the auricle, and these in turn are more readily destroyed than the ones which form the conglomerate on the lower half of the dorsum of the nose.

RESULTS

A total of 51 nodules located on the border and the inner surface of the auricle were treated. Of these, 7 were softened and reduced in size; 3 disappeared later under continued intravenous treatment, while 2 others disappeared gradually with repeated direct injections. On the other hand, 42 were destroyed through the expulsion of their contents.

Of 39 nodules located in the earlobes which were treated, 5 disappeared gradually with repeated direct injections and 34 were destroyed through the expulsion of their contents. The majority of these nodules started disappearing after the third injection.

Of 4 conglomerates of nodules on the nose so treated, 2 have completely cleared up. With the injections continued until this writing, another shows wrinkling with slight infiltration, and the fourth has been reduced to less than one-half its original size.

Of the many scars that were formed only 7 could be regarded as being unesthetic, and 4 of these have already been corrected within a relatively short period of time. This method of administering the promin solution has shortened the vertical

diameter of the ears, in some cases, by more than one centimeter, an effect evidently due in great part to the cicatricial process.

As a result of these treatments in 30 cases, 20 of the patients have been completely cleared of nodules which, because of their location, had resisted the action of intravenously administered promin for from 12 to 30 months. In the other 10 patients, including two with conglomerates of the nose, the disappearance of the lesions has only been partial. If this number of partially cleared-up cases appear to be in contradiction to the number of nodules that have disappeared, it is because these patients have other nodules, located on other parts of the body, which were not injected. These results, obtained within a period of 80 days, have increased from 19 to 39 the number of totally improved cases, among 100 patients suffering from leprosy who were treated with intravenous injections of promin during 30 months, and who constituted the basis for our paper that was presented at the Fifth International Leprosy Congress in Havana.

Treatment of macules and plaques.—In extensive lesions of these kinds the intradermal administration of promin is almost impossible, because of the number of injections that would have to be made and because the caustic nature of the drug produces intense pain and blisters. We have limited the administration of intradermal injections to macules and plaques no larger than 2 cm. in diameter, with mediocre results.