

## LEPROSY AND CANCER

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As a general rule we refrain from diagnosing two diseases in one patient. Sometimes, however, we have to do so; but usually the two diseases occur in different organs. It must be regarded as extremely rare that two etiologically different and independent diseases occur in the same lesion within the same microscopic field.

### CASE REPORT

J.N., a 61-year-old male, was diagnosed in 1930, at the age of 40, as having leprosy. He was probably infected as a sailor in the West Indies. Admitted to the leprosarium in Bergen in 1934, with a typical *lepra tuberosa* with nodular lesions in the skin of the face and extremities. He was treated with chaulmoogra oil, but his condition got worse. In 1947 promin treatment was started and followed by marked improvement. He had a lepra reaction with albuminuria in 1952, and in the same year he noticed a small ulcer behind the left ear which apparently had existed for some time. The ulcer measured a few mm. in diameter; the edges were elevated and nodular. It was removed *in toto*.

*Histologically* (Figs. 1 to 4) there was found a small ulcer with a typical basal-cell carcinoma with dark, elongated cells and hyperchromatic nuclei. Beneath the tumor and in the corium on both sides there was a granulomatous lesion with numerous nodules with clear polyhedric macrophages and a few lymphocytes and plasma cells (Figs. 2 and 3). In some places giant cells are found around clear, round, droplet-like areas (Fig. 3). In some of the nodules a few acid-fast bacilli are found (Fig. 4). The overlying epidermis shows only insignificant hyperplasia. The histological diagnosis, basal-cell carcinoma in an old leprous lesion, is easy.

### DISCUSSION

The first case of carcinoma and leprosy in the same lesion which I have found in the literature is that which was described by Blaschko (3) in 1897 at the Berlin leprosy conference. Two cases of skin carcinoma in leprous patients were demonstrated by Puente and Quiroga (12) in 1930. One case was a basal-cell carcinoma in a 62-year-old male with *lepra nervosa*, the other a squamous carcinoma in a patient with *lepra mixta*. Nothing is said about leprous granulomatous changes in the same lesion with the tumor in either of these cases. Roldan (13) in 1937 described three similar cases. In 1937, Martins de Castro and Martins de Castro, Jr. (8) in a rather extensive paper, presented 25 cases of skin cancers in leprosy patients, 13 basal-cell carcinomas and 12 of squamous type. In

addition they described 19 cases of carcinoma in various organs. In several of the skin lesions and in cancers of the mucous membranes, leprosy granulation-tissue and tumor were found side by side in the same lesion.

In the more recent literature there are three additional cases of skin cancer in leprosy patients reported from Spain, by Rubi6 in 1945 (14), Vilanova also in 1945 (15), and by Vilanova, Ribas and Alvarado in 1950 (16). In these three reports the interrelationship between the chronic inflammatory lesion and the carcinoma is discussed. It is stressed, particularly by Rubi6, that the leprosy granulation tissue apparently reacts well against the invasion of the malignant cells, and that leprosy does not show the "sclerogenic" activity which is so evident in lupus vulgaris. The tendency of lupus to react with pseudoepitheliomatous hyperplasia and sometimes carcinoma is well known (4, 6). A similar tendency is apparently not found in leprosy. Altogether I have found only 33 cases of skin cancers in leprosy patients reported in the literature, so this combination does not seem to be very common. (According to Puente and Quiroga, Hildebrando <sup>in</sup> Portugal reported 9 cases in 1929, which would make the total number of cases 42.) <sup>34 cases.</sup>

In the older literature the relationship between leprosy and carcinoma is discussed from a general point of view. Munch-S6egaard (9-11) stated that cancer is a rare cause of death in Norwegian leprosy. He found only 19 cases of cancer among 2,269 deaths. In individuals above 40 years, 1.2 per cent of the males and 1.8 per cent of the females died of cancer, whereas the percentages in the general population in the same years varied from 5.1 to 8.5. He therefore believed that there may be some kind of relative immunity in leprosy patients to cancer. This view was supported by Bjarnhjedinsson (1), and he also quoted letters from leprologists in several parts of the world whose experience was that the combination of leprosy and cancer was extremely rare.

However, in 1912 H. P. Lie (7) expressed his doubts regarding Munch-S6egaard's conclusions, and there is reason to believe that a closer statistical analysis would reveal several possible explanations of the low death rate from cancer in Munch-S6egaard's material. In 1913, Biehler (2) in Riga presented autopsy statistics which indicated that the death rate from cancer was almost the same among the leprosy patients as among the patients of the general hospital. In spite of these facts Munch-S6egaard's ideas are quoted and similar statements are also given by others (e.g., Kobayashi (5)). On the other hand, Martins de Castro and Martins de Castro, Jr., in their thorough paper, presented altogether 44 cases of carcinoma in patients with leprosy and claimed that there is no reason to believe that leprosy in any way protects the patients from cancer.

With regard to the question of skin cancer and leprosy inflammation, this combination does not seem to be very common, and in the text-books of dermatopathology leprosy is not mentioned among the chronic agents

which may cause cancer. It may be possible, as suggested by Rubió, that the common occurrence of carcinoma in lupus vulgaris lesions in older days may have been due mainly to the kind of treatment given to these patients. He mentions thermocauterization and x-rays. Leprosy is not given any treatment that may be carcinogenic. On the other hand, patients with leprosy who spend most of their time in institutions lead a more protected life than the general population, with less actinic and other possible carcinogenic influences directed against their skin, and this may very well be the reason why the combination of leprosy and skin cancer does not occur often. Our patient had been in activity as a sailor up to the age of 40, and his skin had probably received more than the normal amount of possible carcinogenic stimuli.

The occurrence of carcinoma in a leprosy lesion is mostly of diagnostic interest. If the possibility of this combination is kept in mind, it would appear that the diagnosis of the two concomitant lesions is not difficult.

#### SUMMARY

The author gives a short report of a case with basal-cell carcinoma and leprosy in the same lesion, and a review of the older and more recent literature on this subject. The old presumption that leprosy to some degree protects the patient against cancer is not supported in the modern literature. The occurrence of skin cancer in leprosy granulation tissue does not appear to be very common, and the combination of the two diseases in the same lesion is mainly of diagnostic interest.

#### RESÚMEN

El autor presenta un caso con carcinoma de célula basal y lepra en la misma lesión, y hace un repaso de la literatura en ésta materia. La idea que la lepra protege contra el cancer no encuentra apoyo en la literatura moderna. La presencia de cancer en una lesión leprosa no es muy comun y es solo de interés en el diagnóstico.

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## DESCRIPTION OF PLATE

## PLATE (14)

FIG. 1. The basal-cell carcinoma surrounded by a nodular granulation tissue with clear vacuolated macrophages. H.E.,  $\times 42$ .

FIG. 2. The epidermis (top) with the basal-cell carcinoma and the granulation tissue in the immediate vicinity. H.E.,  $\times 100$ .

FIG. 3. The granulation tissue in the neighborhood of the basal cell carcinoma. H.E.,  $\times 290$ .

FIG. 4. A few acid-fast bacilli are found in the granulomatous lesion. Ziehl-Neelsen,  $\times 1200$ .

(The magnifications given are of the original photographs. There has been a little reduction in reproduction.)

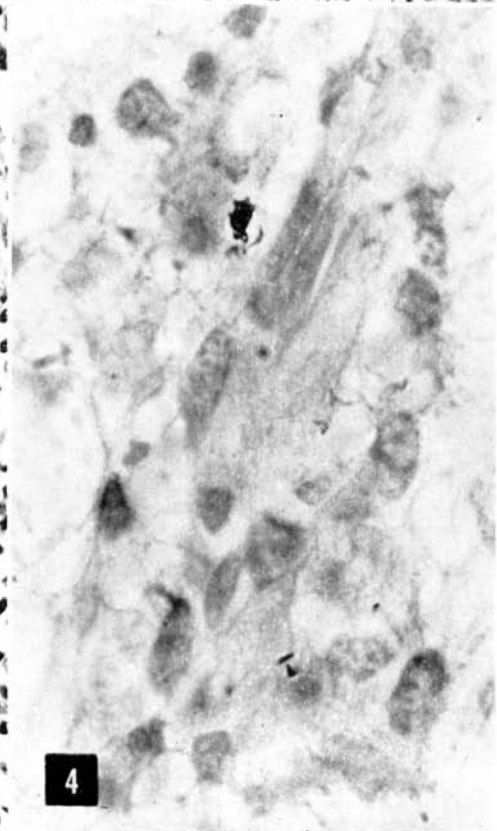
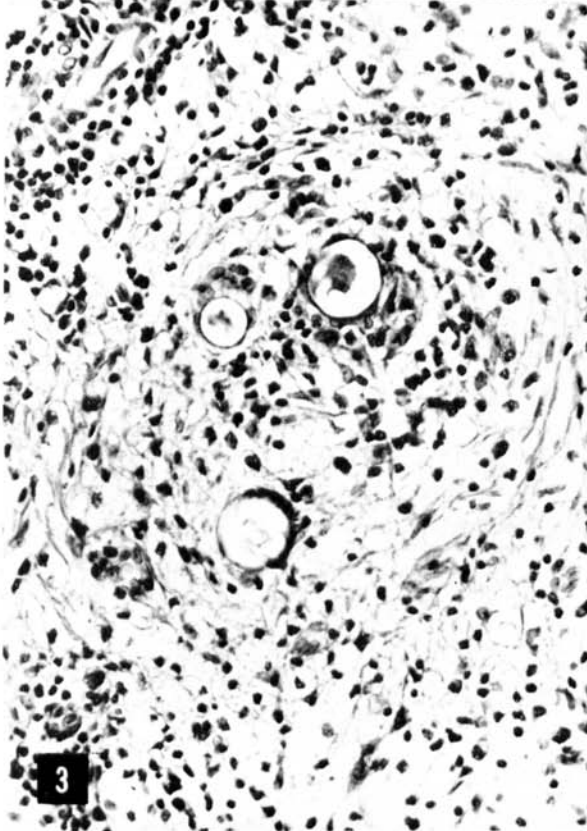
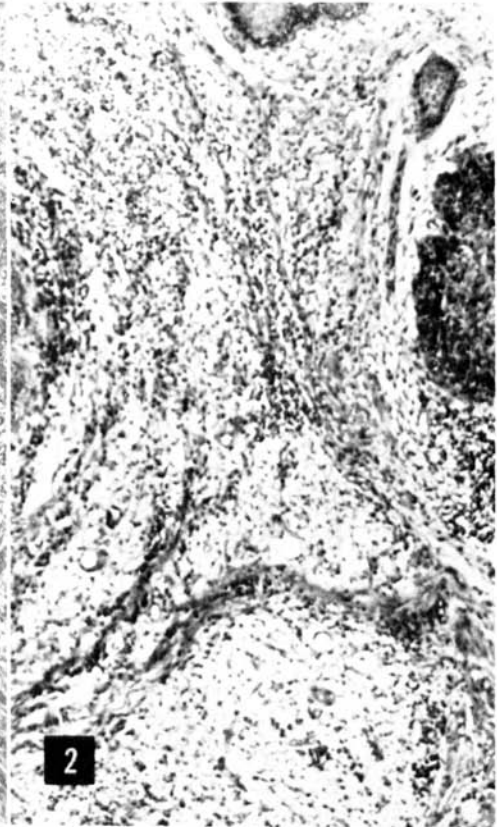
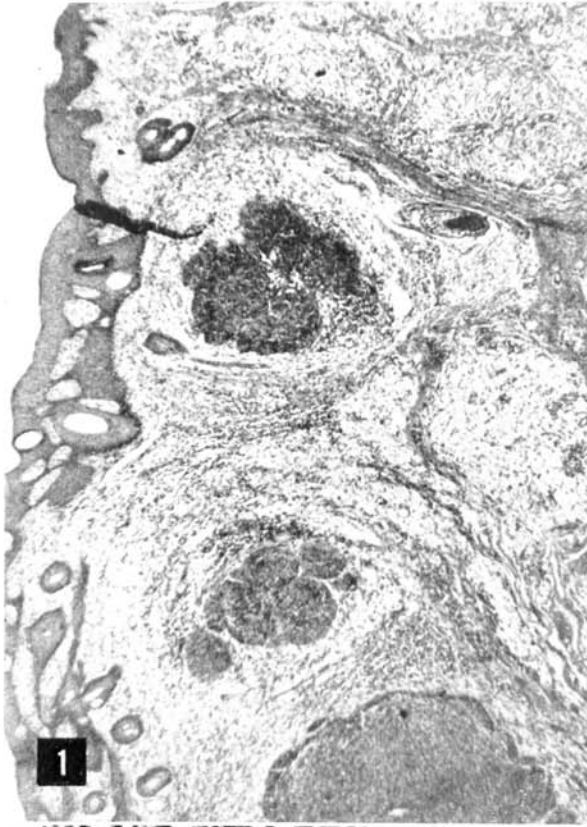


PLATE 14.