

WOLBACH AND SCHAUMANN TYPE INCLUSIONS
IN THE GIANT CELLS IN LEPROSY
PROBABLE VALUE IN PROGNOSIS

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Although the presence of giant cells in any type of lesion in leprosy is not a rarity, the presence of inclusions in their cytoplasm is infrequent. We do not refer to the fatty content in the category of inclusions, but to the bodies known as cytoplasmic inclusions of Wolbach (12) and those of Schaumann (10). Wolbach described and depicted, with photomicrographs and colored drawings, intracellular bodies of stellate appearance found in various organs in five cases of a series of 900 autopsies. Since the patients had died of diverse diseases, he concluded that those bodies were of a nonspecific nature, possibly derived from fibrin.

Such bodies have been reported as found in leprosy tissues by several writers. Mallory (6), with whom Wolbach was long associated, published a picture of a "spiculated body" in a giant cell which also contained leprosy globi with many bacilli. At about the same time Lombardo (4) reported briefly the finding of such "asteroid" bodies, which he believed to be of the nature of elastin, in cutaneous lesions of two leprosy cases; and he mentioned previous reports of their observation in other diseases, including a case of Boeck's sarcoid (Winkler). In a more extensive study of these bodies (5) he presented several excellent photomicrographs. Mitsuda (9) described and sketched stellate bodies in giant cells of leprosy, noting that they stained by methods which demonstrate elastic tissue and by Bielschowsky's silver method. Soeur Marie-Suzanne and Policard (7), who found them in specimens of 4 out of 58 leprosy cases examined, regarded them as accumulations of waste substances in the cytoplasm of the giant cell. Most recently, Vilanova and Esteller (11) concluded that these bodies result from the digestion and incomplete lysis of endocapillary bacillary emboli, and that they evidence organic defense against the leprosy infection.

With respect to sarcoid—according to Friedman (2), who suggested that the underlying condition in Wolbach's cases may

have been of that nature—Jadassohn (3) referred to “asteroid bodies” of unknown chemical nature in one of his cases of that kind. A different type of inclusion body, commonly seen in sarcoid and exhaustively studied by Schaumann (10), is described as roughly spherical or oval-shaped, often with concentric laminations and sometimes with yeast-like budding and nearly always calcified, perhaps an older stage of the asteroid type. Schaumann thought that they may represent tissue reaction around nonbacillary forms of the tubercle bacillus. From his study of the “asteroids” in his one case of sarcoid spleen, which bodies appeared as refractive crystals so arranged that they resemble a star with vague body and with symmetrical prolongations of indefinite chemical composition, Friedman concluded that they possess a high degree of chemical stability, and give negative reactions with the best known stains intended to demonstrate specific substances—lipoids, neutral fat, elastin, collagen, reticulum—although they are colored in dark blue by Nile blue sulfate, and have the same staining affinity as the cytoplasm of the epithelioid and giant cells stained with the routine hematoxylin and eosin. From our own observations of such bodies in sarcoidosis and leprosy it may be added that they are strongly acidophilic.

The Schaumann bodies, according to the literature available to us, have been reported in sarcoidosis and in experimental tuberculosis of certain rodents (1). They consist of highly basophilic, concentric, calcereous laminations, and in the case of experimental tuberculosis they contain bacilli (8). Variants

TABLE 1.—*The occurrence of giant cells and inclusion bodies in material from 300 cases of leprosy.*

| Clinical form | Cases examined | Cases with giant cells | With inclusion bodies | |
|-------------------------|----------------|------------------------|-----------------------|-----------|
| | | | Wolbach | Schaumann |
| Lepromatous | 176 | 24 | 2 | 2 |
| Tuberculoid | 99 | 37 | ---- | 1 |
| Lepromatous in reaction | 3 | ---- | ---- | ---- |
| Tuberculoid, reactional | 10 | 5 | ---- | ---- |
| Tuberculoid neuritis | 9 | 4 | ---- | 1 |
| Lepromatous lymph node | 3 | ---- | ---- | ---- |
| Total | 300 | 70 | 2 | 4 |

can always be observed in the same material as can be seen in the microphotographs presented herewith (Figs. 1 to 4).

Having found asteroid inclusions in a case of lepromatous leprosy, we decided to investigate the frequency of this occurrence. For this purpose we have studied 339 histological preparations from 300 patients with different forms of the disease. The results are given in Table 1.

COMMENTS

From these results it appears that the Wolbach asteroids are encountered only in the lepromatous form of leprosy, while the Schaumann bodies may occur in any form of the disease. This cannot, however, be asserted as a definite conclusion, in view of the limited numbers of cases examined.

In the two lepromatous cases in which the Wolbach asteroids were found there was evidence of regression of the lesions, whereas the Schaumann bodies occurred indiscriminately, regardless of the state of the case. The patients in whose specimens the asteroid bodies were seen had received promin treatment.

The pathogenesis of the asteroid body formation is unknown, although the coincidence of its appearance in cases in which lipid necrosis is found, with reactional granulomas, might suggest a reaction with the lipoids. Perhaps the formation is alien to leprosy and may represent an expression of nonspecificity in the granulomatous tissue, but even if that be so we believe that they possess a value as a prognostic index.

CONCLUSIONS

1. Cytoplasmic inclusions may be seen in the giant cells of leprous infiltrations.
2. Bodies with the characteristics of both the Wolbach asteroids and the Schaumann bodies have been observed.
3. Asteroids may possess a value as prognostic index.
4. Schaumann bodies are not specific for sarcoidosis.

CONCLUSIONES

1. Es posible observar inclusiones citoplasmaticas en las celulas gigantes de los infiltrados leprosos.
2. Cuerpos con las caracteristicas de los denominados asteroides de Wolbach y cuerpos de Schaumann fueron observados.
3. Los asteroides podrian tener un valor como indice pronostico.

4. Los cuerpos de Schaumann no son especificos de la sarcoidosis.

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DESCRIPTION OF PLATE

PLATE 6.

FIG. 1. Lepromatous granuloma. Vacuolated giant cells, one with an asteroid of Wolbach.

FIG. 2. Asteroid body in a giant cell.

FIG. 3. Schaumann body of a giant cell; tuberculoid lesion.

FIG. 4. A giant cell with a Schaumann body in a typical follicle of tuberculoid leprosy.

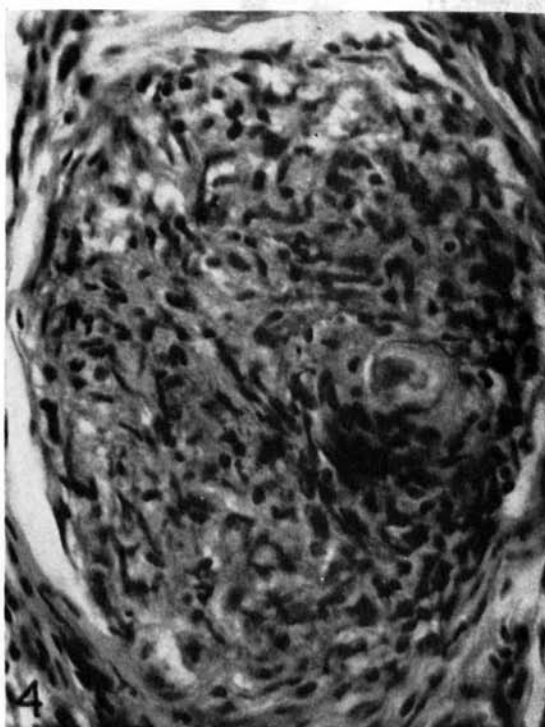
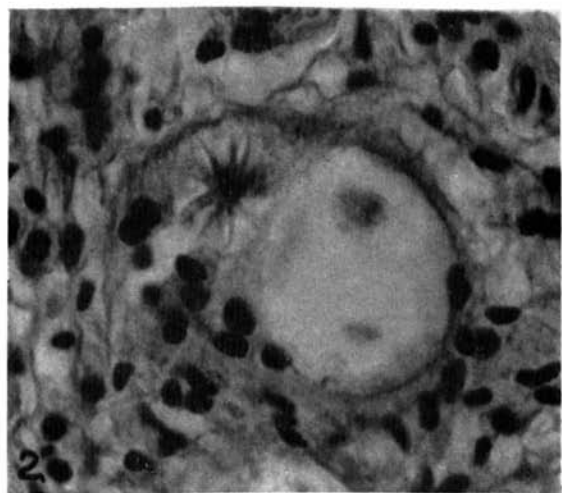
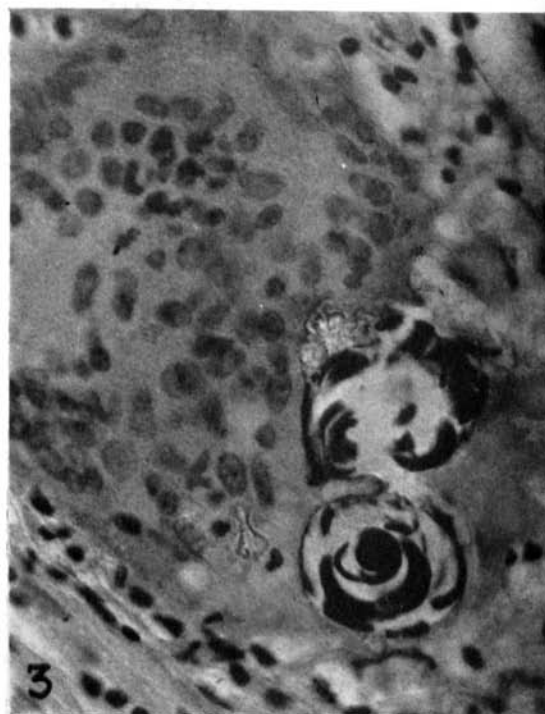
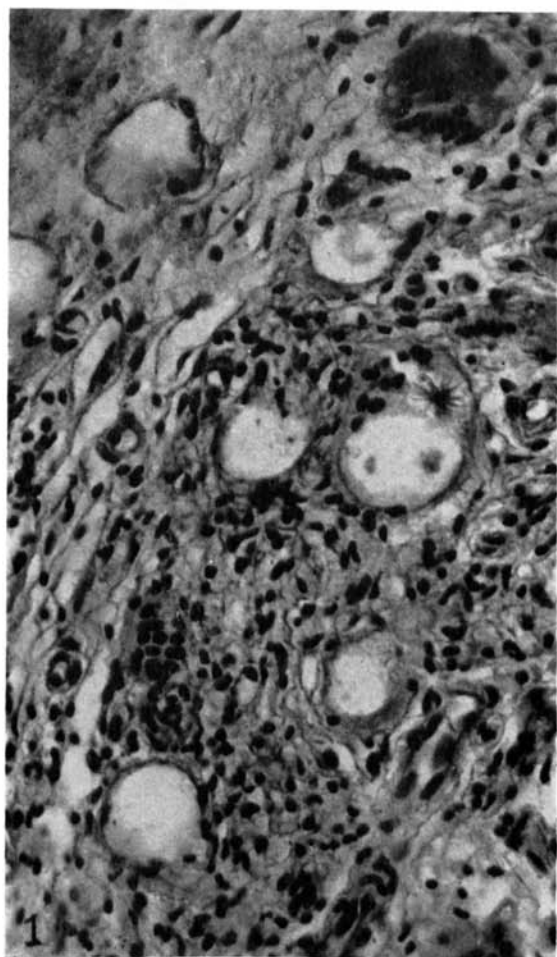


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