Acrodermatitis chronica atrophicans, Erythema chronicum migrans and Lymphadenosis benigna cutis—Spirochetal Diseases?

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Frithz A, Lagerholm B. Acrodermatitis chronica atrophicans, erythema chronicum migrans and lymphadenosis benigna cutis—spirochetal diseases? Acta Derm Venereol (Stockh) 1983; 63: 432–436.

Seven cases of acrodermatitis chronica atrophicans (ACA), 11 cases erythema chronicum migrans (EMC) and 3 cases of lymphadenosis benigna cutis (LABC) have been analysed. In Warthin-Starry stained sections, spirochetal structures were present in all cases. The spirochetes were mesodermotropic and irregularly distributed. *Key words: Acrodermatitis chronica atrophicans; Erythema chronicum migrans; Lymphadenosis benigna cutis; Spirochetes.* (Received April 14, 1983.)

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The etiology of acrodermatitis chronica (ACA) (Pick 1894 and Herxheimer 1902), erythema chronicum migrans (ECM) (Afzelius 1909) and lymphadenosis benigna cutis (LABC) delineated by Bäfverstedt 1947 has been repeatedly discussed.

Concerning ACA and ECM, various infectious agents have been proposed. Assuming ACA and ECM to be spirochetal diseases, Thyresson (1) and Hollström (2) successfully treated those diseases with penicillin. von Bianchi (3) reported positive results with penicillin treatment of LABC.

Lennhoff (4) was the first to visualize the presence of spirochete-like structures in various etiologically obscure diseases. Among the investigated diseases, Lennhoff observed the presence of spirochetal structures in ECM and LABC (4). Attempts to prove his observations of spirochetal structures as being the etiological agent of the investigated diseases have not been finally conclusive.

Recently a spirochetal etiology of Lyme disease has been proposed by several authors (5, 6, 7, 8). However, only Clemmensen (6) claims to have found, in sections from human skin as did Lennhoff in 1948, the presence of spirochetal structures.

MATERIAL

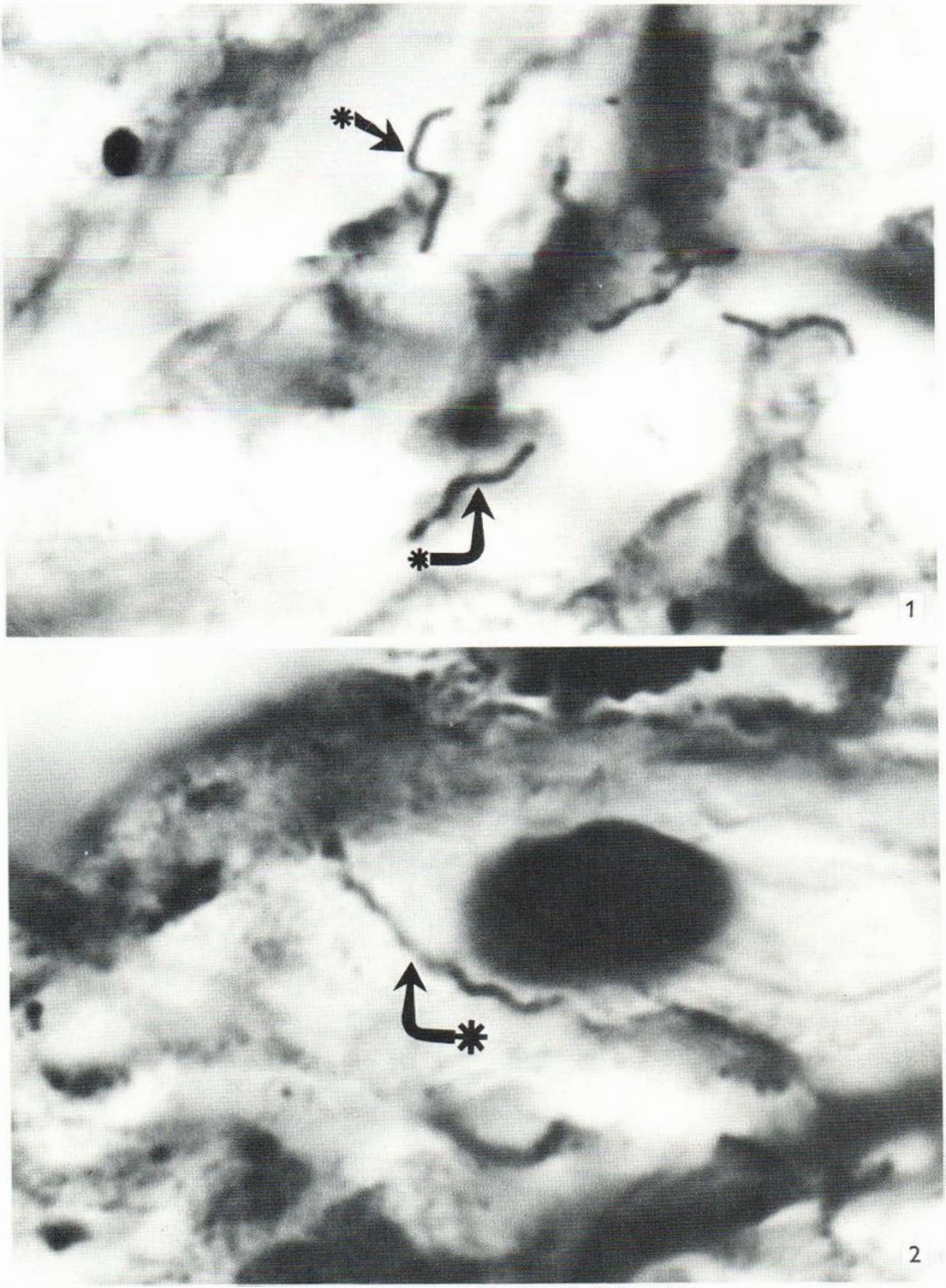
Seven consecutive cases of acrodermatitis chronica atrophicans were collected. The material consisted of 6 women and 1 man, age range 41–72 years. The duration of the disease ranged from 4 months to 7 years. The investigated cases of erythema chronicum migrans consisted of 11 patients, 25–54 years of age, with lesions of erythema chronicum migrans which were 2–10 weeks old.

3 patients, 14, 56 and 63 years old, had suffered from lymphadenosis benigna cutis for 2–6 months.

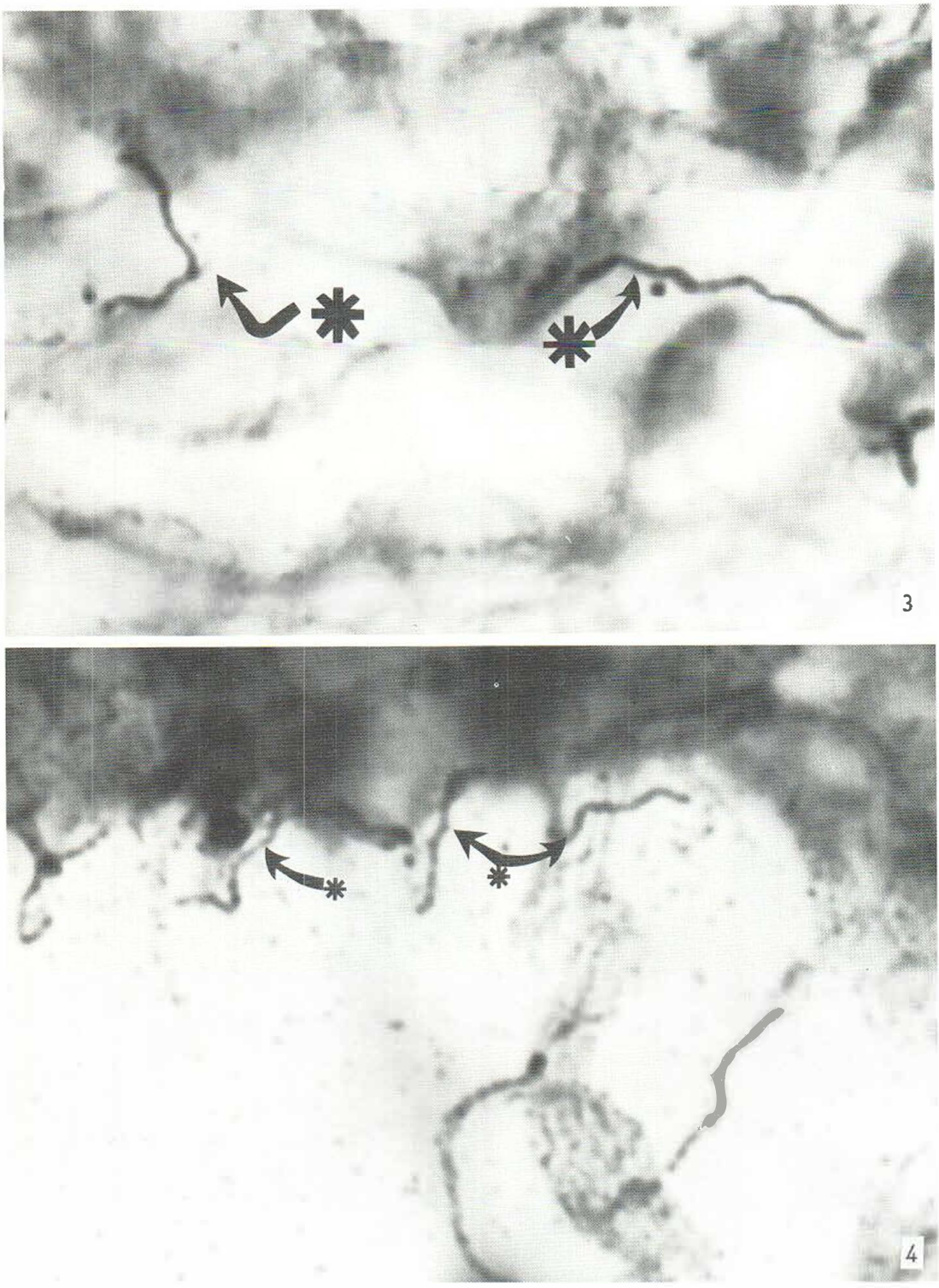
METHODS

Punch biopsy samples were obtained from skin lesions of the dermatoses specimens. Biopsy in question were taken from the inflammatory phase of acrodermatitis chronica atrophicans and from peripheral erythematous areas of erythema chronicum migrans.

The specimens were processed for routine histological examination, including staining according to the Warthin-Starry method (9). The presence of plasma cells was proved according to the method of Unna. Material for electron microscopy was prepared at the same time.



Figs. 1 and 2. Spirochetes acrodermatitis chronica atrophicans. ×750.



Figs. 3 and 4. Spirochetes in erythema chronicum migrans lesion. ×750.

RESULTS

Light microscopy

In all the 7 analysed cases of acrodermatitis chronica atrophicans the vascular changes, with endothelial swelling in particular, were obvious and the mainly perivascularly distributed inflammatory infiltrates were rich in plasmacellular cells. The presence of spirochetes was obvious in specially stained sections and their currence was most abundant in juxtavascular position and to some extent patchy.

Light microscopical analyses of the 11 investigated cases of erythema chronicum migrans revealed a vascular engagement with endothelial swelling, though not so pronounced as in acrodermatitis chronica atrophicans. The perivascular inflammatory infiltrate was dominated by lymphocytic cells, but plasmacellular cells were found in considerable numbers in some cases. The spirochetal structures were in all cases distributed in a similar manner as in the acrodermatitis chronica atrophicans biopsies. Furthermore, strongly suspected structures of the same type are found in lymphadenosis benigna cutis.

Electronmicroscopy

Submicroscopical analyses are in progress.

DISCUSSION

The findings of spirochetal organisms in the investigated diseases and to some extent also the histopathological changes, and the reported healing effect of penicillin treatment, are compatible with a spirochetal etiology for these diseases.

Whether or not the spirochetes present in the analysed sections are different organisms remains to be settled, as also does the question about the identity of isolated spirochetal organisms from ixodes (8). In this connection it is interesting to note the observations of Mach (10) that lymphadenosis benigna cutis can be divided into a lymphocytic, a granulomatous, a retothelial, a follicular and a plasmacellular type. We believe that those types merely reflect a dynamic evolution and we have reason to believe that spirochetes are most probably found in the plasmacellular developmental stage.

If the question should arise concerning the naming of these spirochetes, then Dr Carl Lennhoff ought to be remembered. Some critical aspects concerning Lennhoff's spirochetal findings have been published (11). However, among all the investigated diseases (4) the spirochetal findings by Lennhoff in ECM and LABC seem to be correct and most probably of etiological importance.

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