

caixa 21
15



A preliminary note on a pleomorphic slime-organism found in two cases
of a gummatous-ulcerative dermatosis of the leg

ALDO CASTELLANI
Instituto de Medicina Tropical (Lisboa)

ESCOLA NACIONAL DE SAÚDE PÚBLICA
E DE MEDICINA TROPICAL
DE LISBOA
BIBLIOTECA

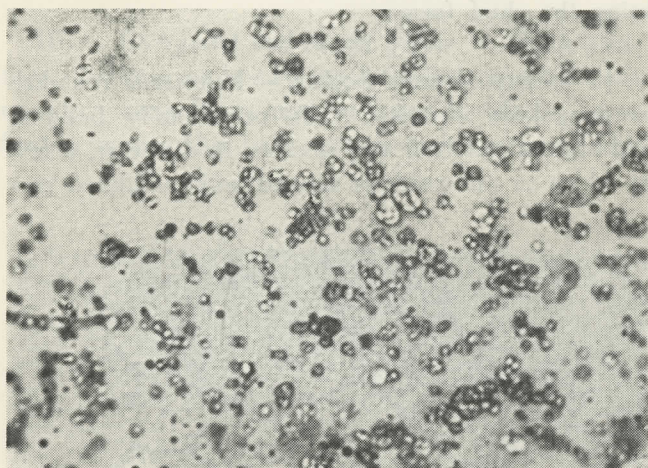
MT/CX21

A preliminary note on a pleomorphic slime-organism found in two cases of a gummatous-ulcerative dermatosis of the leg

ALDO CASTELLANI

Instituto de Medicina Tropical (Lisboa)

During the last three years I have observed two cases of an ulcerative dermatosis of the leg which, to my knowledge, has not been described previously. It runs a chronic course and is characterized by the presence of several gummata and open sores on the leg which are practically neither painful nor tender.



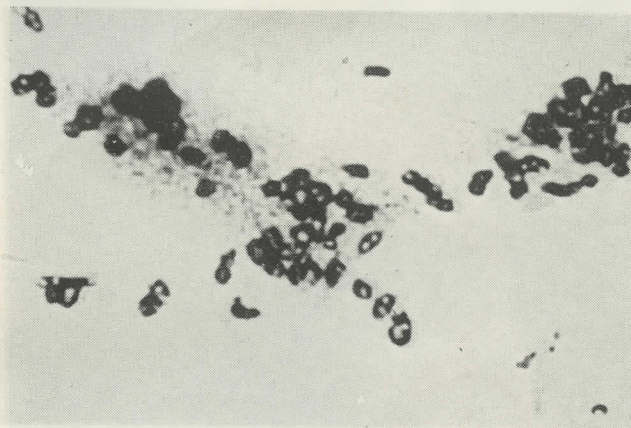
Preparation from glucose agar culture stained with undiluted carbol-fuchsin. The vacuole-looking white spots are not most of them vacuoles but «endospores» which have hardly taken the stain. 1320 $\times$.

Wasserman negative. The clinical picture suggests on superficial examination sporotrichosis, but the lesions are not situated along the lymphatic channels and no sporotrichum fungus is found on mycological investigation. Instead in my two cases both from the unopen and the open lesions a most pleomorphic slime producing organism was grown which apparently possesses certain features found among the *Myxobacteriales* and the *Myxomycetes*, organisms with which the medical bacteriologist and the medical mycologist have little or no familiarity: in all text books on medical Bacteriology and medical Myco-

logy the statement is made that they never occur in man. It might also be possible that we are in the presence of not a single pleomorphic organism but of an association of different organisms living in symbiosis, although as yet I have not been able to separate them.

The term «pleomorphic» is used in its original sense and not *sensu Sabouraud*, which would indicate permanent irreversible changes.

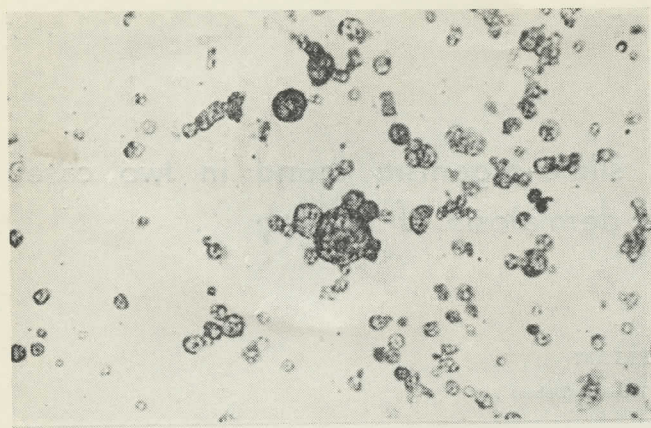
Cultural characters. — In glucose agar slants six to eight days old kept at the temperature of the room the surface is covered with an abundant translucent



Preparation from a glucose agar culture stained with undiluted carbol-fuchsin. Note variously shaped cells including amoeboid, fusiform, cryptococcoid and bacillary ones. Careful inspection with a magnifying lens also reveals a large mass of unstained free spores immersed in a mucoid matrix.

film of slime with here and there well visible opaque areas, especially if the culture is viewed in reverse. A pinkish colour is often present.

In older cultures isolated heaped hardish colonies may at times appear, whitish or yellowish or reddish



Preparation from glucose agar culture stained with undiluted carbol-fuchsin. Note in centre a «cyst» with several buds. Both cysts and buds contain endospores.



Case of Myxo-ulcus cruris showing an open sore and somarchat above it gummata (the darker spots).

or red which may possibly be regarded as having some similarity to the so called fruiting bodies of certain myxobacterials.

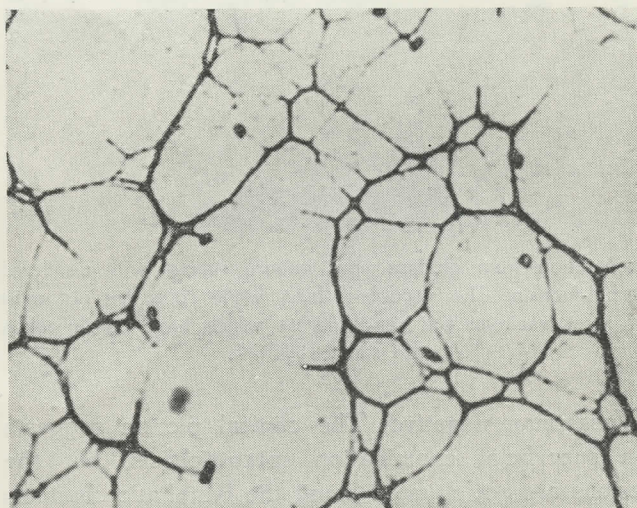
Liquid media. — In Sabouraud's maltose broth and in peptone water growth fairly abundant at the bottom of the tube, the column of liquid remaining clear; no pellicle, no ring.

In old cultures strings of mucus may often be seen.

Pathogenicity. — The intraperitoneal injection of 2 ml of a ten days old peptone water culture (well shaken) kills a young guinea-pig between ten and twenty one days. The peritoneal liquid is very scanty, mucoid and contains no leucocytes.

Microscopy. — In wet and stained preparations made from glucose agar cultures, specially if made from the sediment at the bottom of the tube, numbers of variously shaped bodies are seen, the following being the chief forms:

I. — *Cryptococcoid bodies.* — Numerous roundish or irregularly roundish cells occasionally budding and approximately 2 to 5 microns in diameter, a few of which in preparations stained with undiluted car-



Mucoid reticulum simulating mycelium.

bol-fuchsin (twenty five seconds) appear diffusely stained while some stain deeply at the periphery and very little or not at all in the centre producing ring-forms with one or two deeply staining granules. Gram constantly negative. Only exceptionally an occasional cell may appear slightly doubtful. Ziehl-

Neelsen negative although not rarely some minute portions may appear to retain the fuchsin stain.

The careful microscopic examination of the cryptococcoid cells will show that they usually contain one or two or four or more ovaloid or roundish bodies which for convenience will be referred to as «endospores». Some cryptococcoid cells may show one or more buds and in the buds also endospores will frequently be seen.

II. — «Cysts». — Scanty and irregularly scattered among the cryptococcoid cells are larger roundish or ovaloid cells 6-12 microns in diameter presenting a thickish deeply staining wall and filled with numerous endospores. These structures may be referred to for the time being as «cysts» or «sporangia» or «macrospherules». At certain stages of development, apparently the walls break and the spores come out.

Quite often one or more buds are noted on the wall which originate strings of similar cells by repetition.

III. — *Elongated and motile forms*. — Thick bacillary, fusiform or somewhat crescentic shaped cells are often seen. They may at times be motile, some darting across the field, others moving round and

round in a most peculiar way. The cryptococcoid cells appear to be non-motile, but a few similar but perhaps either slightly larger or smaller cells seem to be capable of amoeboid changes in their contour (no pseudopoda) and also capable of peculiar overturning movements with or no translation movements.

IV. — *Transition forms*. — These are frequent and numerous.

V. — *Filamentous branching forms*. — These are in my opinion in all probability artefacts due to inspissated mucus although some of them may closely simulate true mycelial hyphae and pedicellate conidia.

Although I am aware that the rules of taxonomic nomenclature no longer allow the creation of temporary new species or new genera, I would suggest that for convenience this exceedingly pleomorphic organism might be referred temporarily as *Myxomicrobium multiplex*, the first term of the binomial indicating profuse production of slime and the second extreme pleomorphism almost suggesting an association of various germs. I shall be pleased to send cultures of it to medical men and laboratory workers interested in the subject.

