

Common Corn on Sole : the cause

Human sole is often infected with a fungus causing non-suppurative corns. Such corns are not killers but are constant source of irritation and pain. When the corn is pressed crucial pain radiates from the afflicted spots.

Syndrome

In the initial stage of infection the patient perceives periodic itching. After a prolonged period, a blue-black circular spot, not more than 5 mm across, develops subcutaneously at the point of infection and itching continues. Gradually this black spot hardens into a horny disc and may turn ash grey. The cuticular tissue round the disc become tumescent and forms a rim. This tumescent wort like growth is termed corn. As it grows older the disc may crack and fissures may appear (Figs. 1 and 2).

The patient feels enormous pain when the corn is pressed as one walks. The patient feels inclined to cut out the tumescence to reduce pressure.

In course of time the corn may flatten and the area become horny and cracked ; a centre spot, very sensitive to touch, remains.

The tissue immediately below the disc along with fungal mycelia forms a stiff conic spindle into the sensitive interior and generates crucial pain. The spindle when surgically lifted shows mycelia in a slime of fat.

The Fungus in Culture

The fungus was isolated from an excised spindle, on Sabouraud's agar and incubated at 34°C. Hyphal growth was visible after a week ; growth was slow. The colony when 2.5 cm in diameter was an appressed ochraceous-pink mat having a rough powdery surface without pronounced growth of aerial mycelia. The advancing zone was thin, silky and much appressed. The colony, incubated at 34°C and 95% R. H., attained a diameter of 4.0 cm in 35 days.

The hyphae are hyaline, thin walled 2-6 μ broad rounded and wider at the tip. The short aerial hyphae undergo basipetal septation forming a chain of arthrospores. The submerged older hyphae produce arthrospore in the same manner. Arthrospores are cylindrical but appear rectangular under microscope ; they soon separate and corner are rounded off to give, more or less, an ellipsoid appearance. The arthrospores measure 3.0 to 6.2 μ broad and 3.5 to 9.5 μ long ; they are



Fig. 1 Sole showing five corns with distortion of the last two toes. Fig. 2. A prominent tumescence on the edge of the sole.

hyaline with wall thicker than hyphae from which they are formed. Cotton-blue stains the young hyphae and spores but older hyphae do not take the stain.

Identity

The fungus which is aerobic and can dissolve fat, reproduce only by arthrospore, is identified as *Madurella* sp. as it slightly differs from *M. mycetomi* Leveran, which is stated to produce black sclerotes, while the one under study does not.

Further study is proceeding.

Therapeutic

An organic compound with alcohol as conduit proved effective, preventing resurgence of the corn.

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