

LEISHMANIASIS in Panama

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Leishmaniasis in Panama is basically a zoonosis of forest animals caused by several species of *Leishmania*, a protozoan parasite which infects the skin of its host. *Leishmania braziliensis* has been cultured from a variety of animals, whereas only a small number of rodents from an area of Northwest Panama have been found infected with *Leishmania mexicana*. A recently described species, *Leishmania hertigi*, has been repeatedly recovered from the tropical porcupine. The latter infection does not cause skin lesions in these hosts.

Up to the present time, only *L. braziliensis* has been implicated in human infections in Panama. If man invades and disturbs the environment, particularly around tree buttresses on the jungle floor or up in the canopy, he may become an accidental host of this organism. Transmission occurs by the bite of several species of sandflies during a blood meal.

CLINICAL FINDINGS.

The most frequent lesions of human cutaneous leishmaniasis begin on exposed surfaces (arms, legs, face or trunk if not clothed) as tiny erythematous nodules

which may be single or multiple. The onset may be as early as three weeks and as long as three months after exposure, but most commonly, it is three to five weeks. Over the next several weeks the nodule enlarges, becoming papular and shiny, until it reaches about 1 cm in diameter; at this time the center breaks down and appears necrotic, probably due to an impaired blood supply to the skin in that area. The lesions may be slightly pruritic, but are almost never painful. It is usually at this time that the patient seeks medical attention. If no treatment is instituted, the lesion rapidly enlarges by several more centimeters, becoming round or elliptical with an elevated and rolled border (Figure 1). Secondary bacterial infection is common. At the base of the crater there is usually reddish granulation tissue covered with either necrotic material or a dry brownish-white crust which may be easily removed with forceps after soaking in warm soapy water. If the patient is treated by himself or non-medical personnel, the crater may take on a variety of appearances and become severely infected. At this time chains of lymph nodes, measuring about 0.5 cm. in diameter, are commonly found by carefully palpating appropriate areas; these represent local extension.

Metastasis to the mucous membranes of the mouth, nose, and throat may occur in untreated cases, although it is not seen as commonly in Panama as in other South American countries. This is called mucocutaneous leishmaniasis and is associated with a variety of lesions, such as perforated septum, or loss of the

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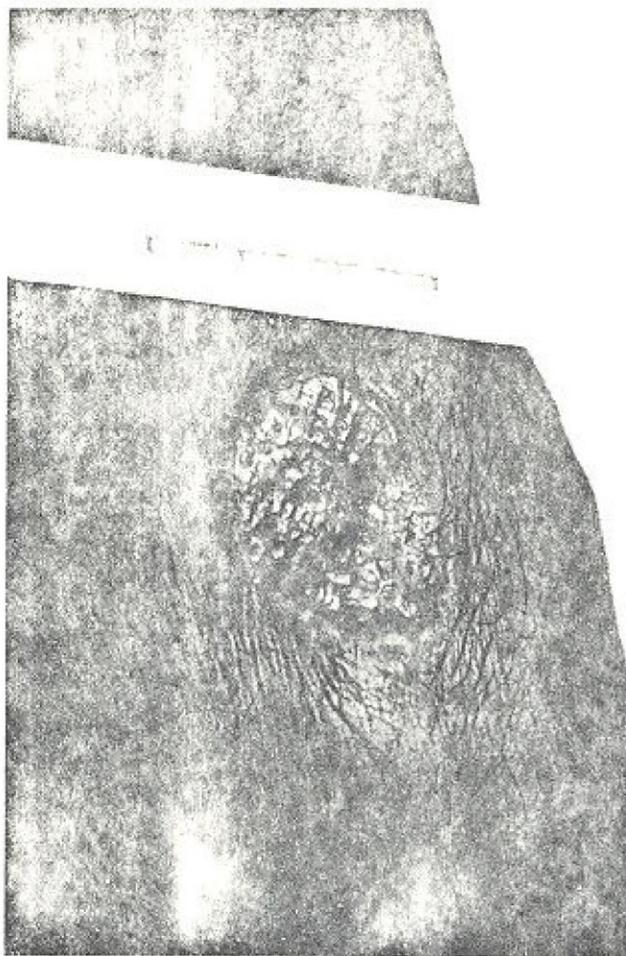


FIGURE 1.—Typical lesion of leishmaniasis on the dorsum of the hand, approximately six weeks in duration.

uvula or epiglottis, with replacement by chronic granulomatous tissue. With very extensive involvement, asphyxiation secondary to aspiration has been seen in Panama. Blood-borne metastasis, though rare, does occur. Multiple lesions, which are younger than the original one(s) may suddenly appear over extensive areas of the body and enlarge simultaneously.

Destructive lesions of the ear, particularly the tragus, have been observed and resemble the so-called chiclero ulcer, which occurs principally among the chicle gum gatherers of Mexico where the infectious agent is *L. mexicana*. Systemic leishmaniasis (kala-azar) caused by *Leishmania donovani* has not been reported in Panama.

DIAGNOSIS.

The diagnosis of leishmaniasis is confirmed only by identification of the parasite through scrapings, needle aspiration, biopsy or culture. The first method is the simplest and will be the only one discussed. After cleansing, the lesion is scraped 1-2 mm. outside the crest of the rolled border and parallel to it, for a

distance of about a centimeter, with the tip of a scalpel or other sharp instrument (Figure 2). This area is used because the parasites are found only in the retreating epidermis. The skin is denuded carefully until serum begins to appear. This serum should be as free from blood as possible to facilitate finding the parasites. Clean glass slides are then pressed against the area to remove the serum (Figure 3), which is allowed to dry. The smears are then stained with a Romanowsky (Giemsa) stain using a thick film technique to cause hemolysis of any red cells. All *Leishmania* appear the same under the light microscope and must be diligently sought. They are round or ovoid organisms, about 2 to 5 micra in diameter; containing a relatively peripheral nucleus with an adjacent, small, very dark kinetoplast; both of which stain reddish-purple, in contrast to the cytoplasm that stains blue. It should be noted that with biopsy, *Leishmania* are intracellular; but by the scraping technique, epidermal cells and macrophages are disrupted and the parasites become extracellular. The organisms are most easily demonstrated in early

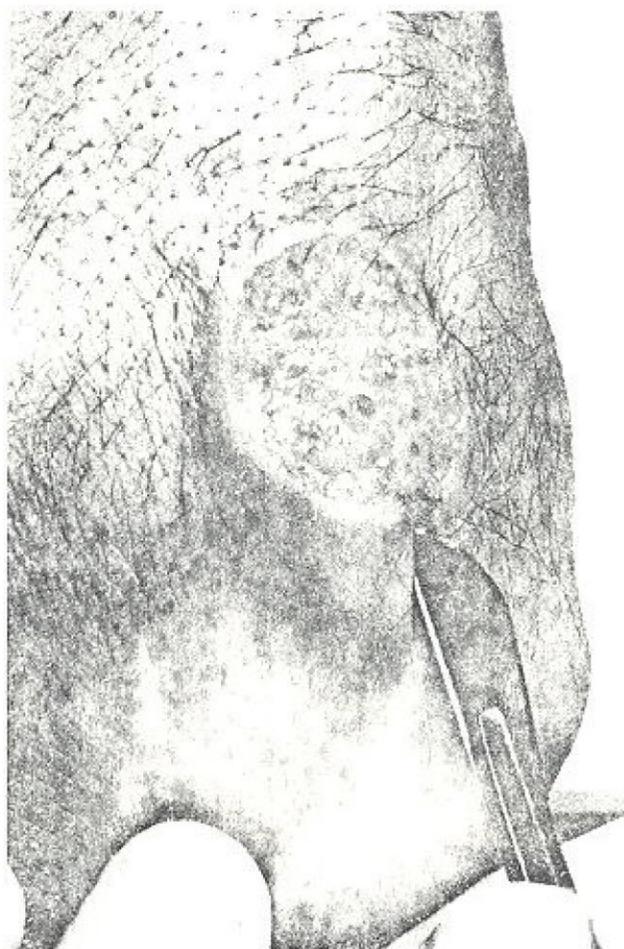


FIGURE 2.—The lesion is scraped just outside the crest of the rolled border and parallel to it.

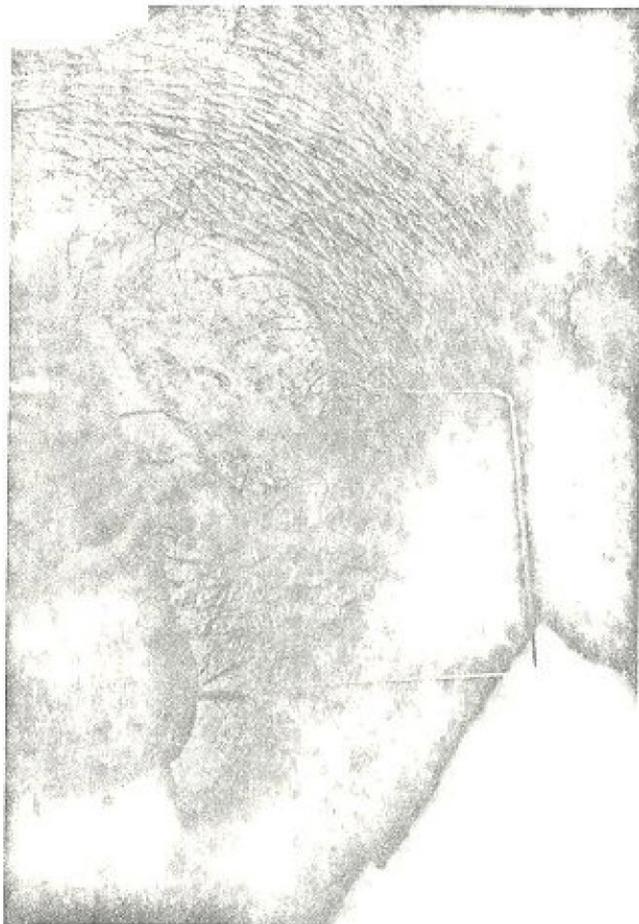


FIGURE 3.—The serum, containing disrupted cells is removed on a clean glass slide.

lesions which are not secondarily infected. It may be necessary to administer a ten-day course of tetracycline and have the patient wash the lesion frequently with warm soapy water, prior to the scraping procedure, in order to demonstrate the parasites.

Ancillary diagnostic procedures include the leishmanial (Montenegro) intradermal test and the indirect fluorescent antibody examination of serum, but these are not generally available in the United States.

In Panama the differential diagnosis includes leprosy, yaws, syphilis, and sporotrichosis.

TREATMENT.

The susceptibility of leishmanial organisms to drugs may vary somewhat according to geographic locality,

but in Panama the use of the pentavalent organic antimonial, sodium antimony gluconate (Pentostam — available from the Communicable Disease Center, Atlanta, Ga.), has been found to be very effective. It is given intramuscularly, three times weekly for ten doses; well over 90% of the patients respond and if a second course is necessary, almost 100% response has been observed. Side effects and toxicity are low. Another drug that has been effective in about 70% of Panamanian Leishmania strains is cycloguanil pamoate (Camolar — Parke, Davis and Company). This is suspended in an oleaginous vehicle of 40% benzyl benzoate and 60% castor oil, to slow absorption. Thus the drug can be given in a single intramuscular injection in the buttock. The average adult dose is 350 mg. In cases where the patient cannot tolerate these drugs or where there is no response, pyrimethamine (Daraprim — Burroughs Wellcome) 25 mg, twice daily can be given.

Hypopigmented but otherwise normal skin ordinarily begins to replace granulation tissue within several weeks after therapy is begun. Complete regression usually occurs in three to four weeks, but varies in relation to the age and size of the lesion.

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