



## **Leishmaniasis**

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# Leishmaniasis

## *Objectives*



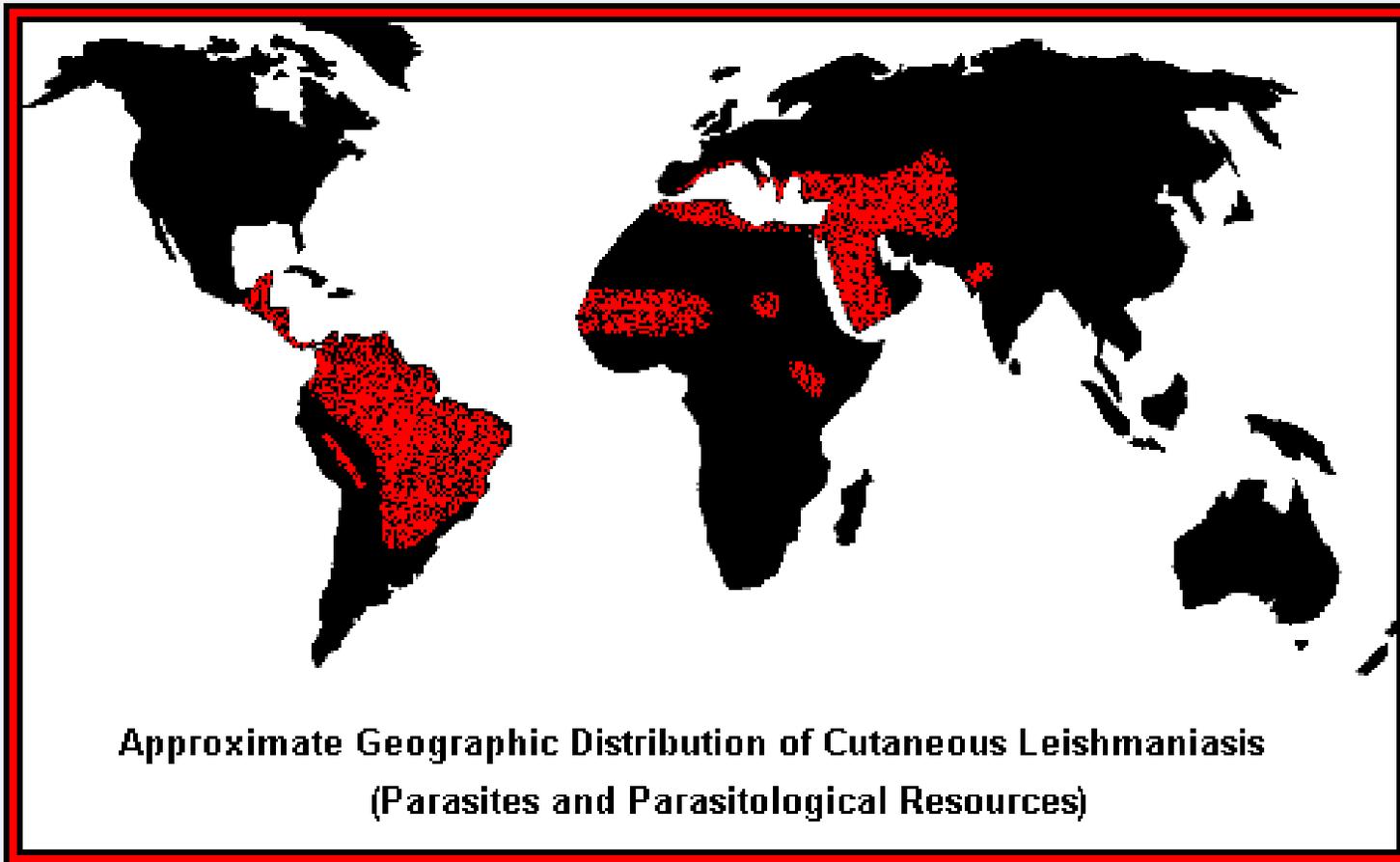
- ★ Define Leishmaniasis
- ★ Describe the clinical presentation
- ★ Describe diagnostic procedures
- ★ Discuss available treatments for Leishmaniasis

# Leishmaniasis

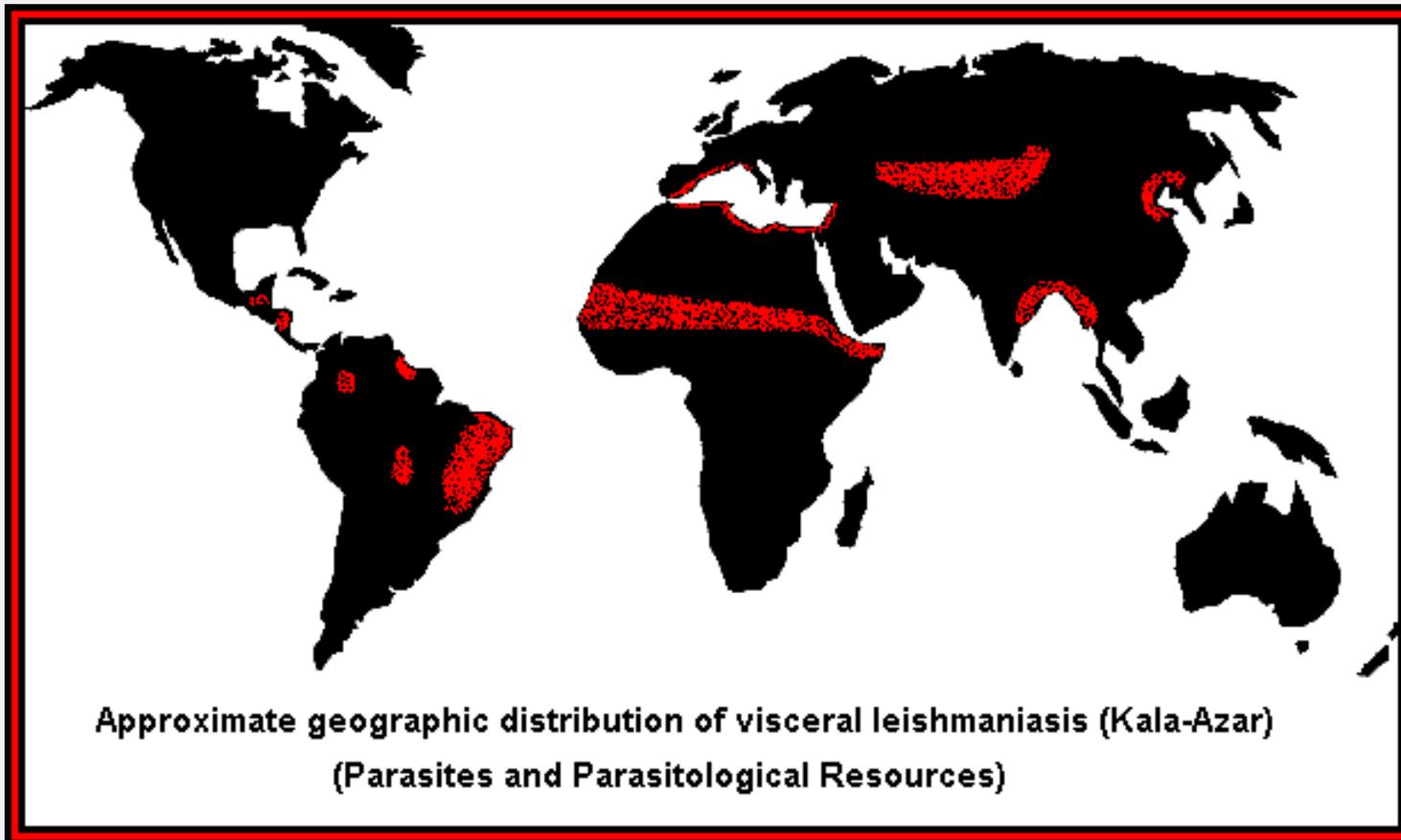


- ★ Group of diseases caused by infection with one of the protozoan parasites of the genus *Leishmania*
- ★ Designated one of the five most important diseases worldwide by the World Health Organization
- ★ 20 million people infected worldwide

# Geographic Distribution *Cutaneous Disease*

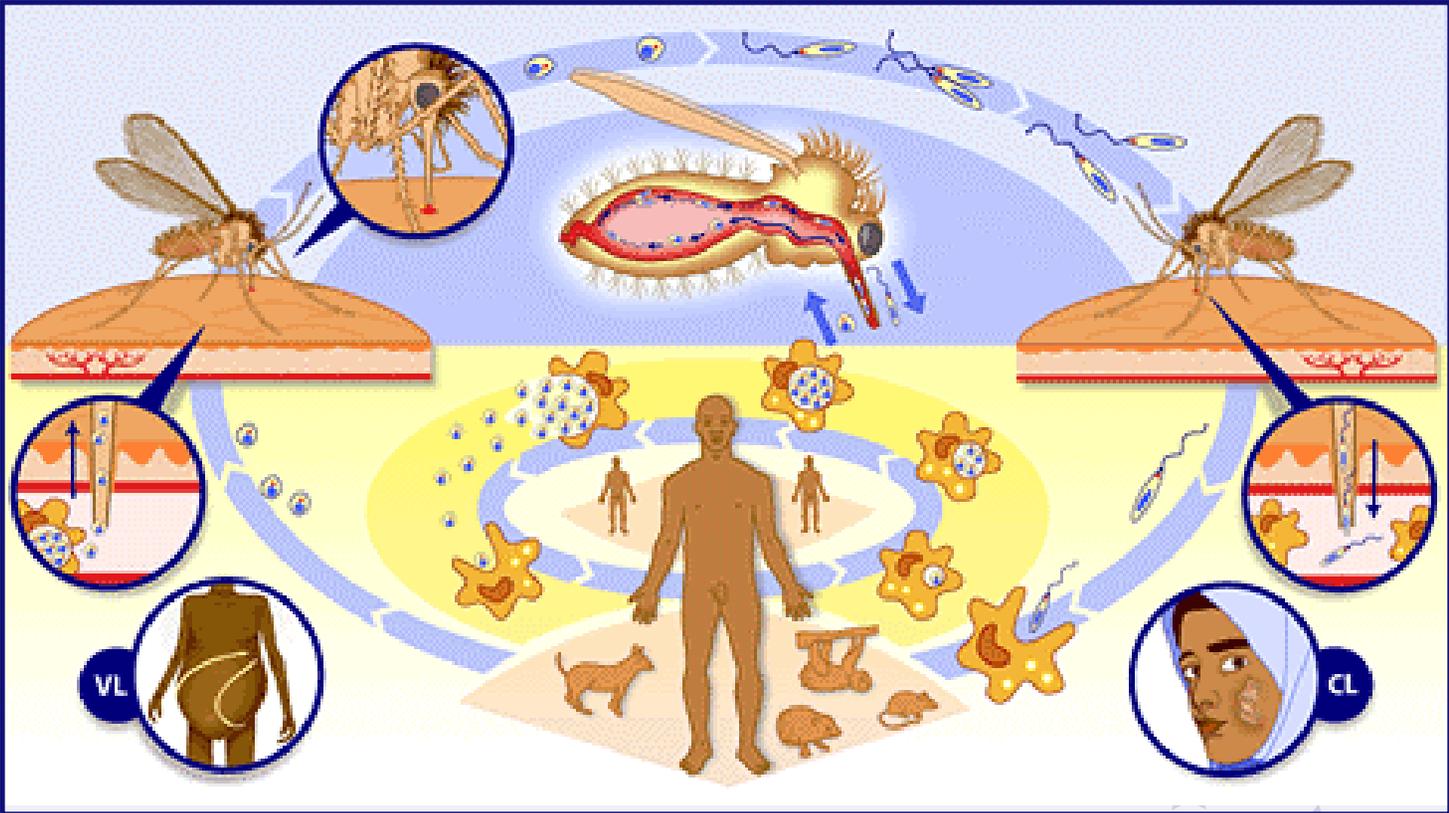


# Geographic Distribution *Visceral Disease*



Approximate geographic distribution of visceral leishmaniasis (Kala-Azar)  
(Parasites and Parasitological Resources)

# Life Cycle



Copyright: TDR/Wellcome Trust

# The Vector



Courtesy of Dr. Ed Rowton, WRAIR

# Clinical Presentation



- ★ Cutaneous disease
- ★ Mucocutaneous leishmaniasis (Espundia)
- ★ Visceral disease (Kala-azar)



# Localized Cutaneous Leishmaniasis



- ★ Baghdad boil, Aleppo evil, Chiclero's ulcer
- ★ Commonly presents as a non-healing ulcer
- ★ Incubation period ~40 days, but can range from days to a year



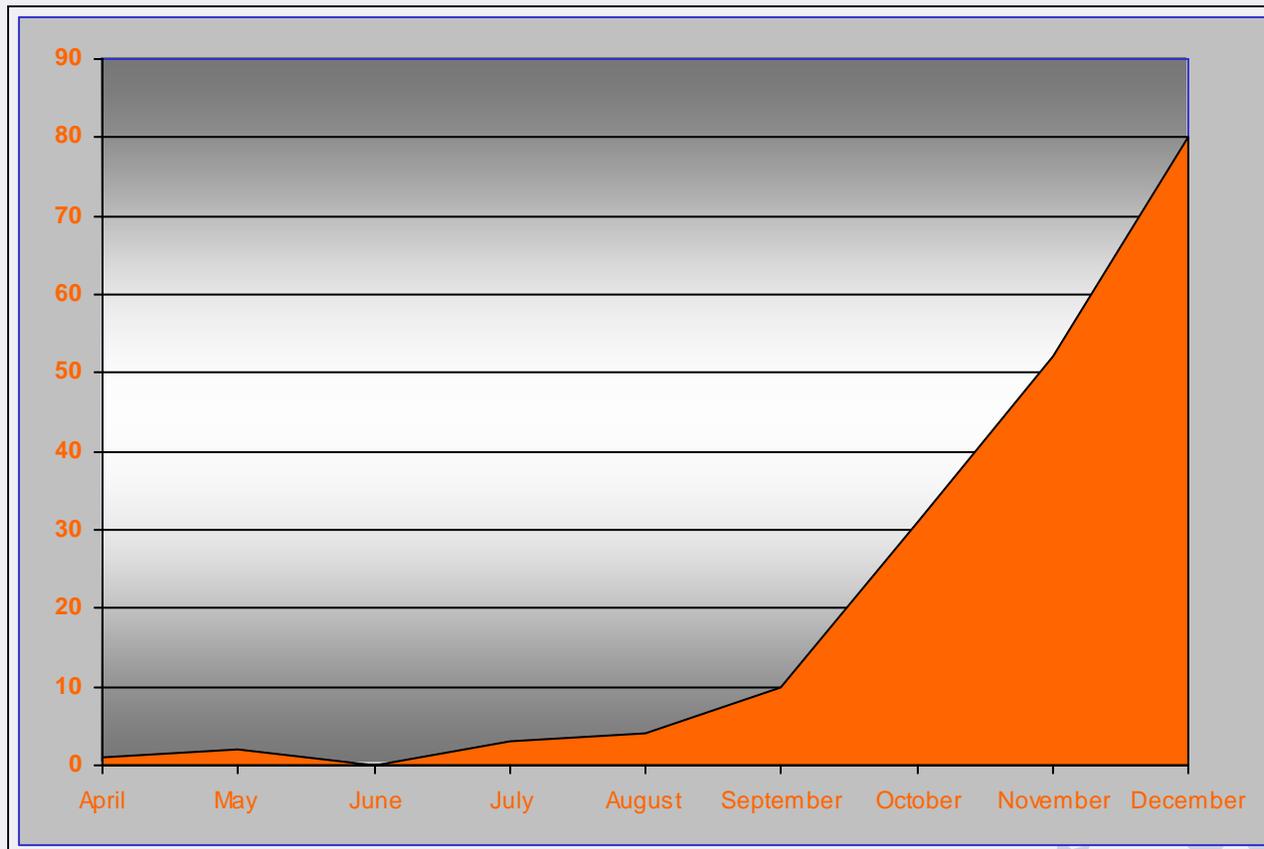
# Cutaneous Leishmaniasis



"In some cities infection is so common and so inevitable that normal children are expected to have the disease soon after they begin playing outdoors, and visitors seldom escape a sore as a souvenir. Since one attack gives immunity, Oriental sores appearing on an adult person in Baghdad brands him as a new arrival..."

Introduction to Parasitology, 1944

# Number of OEF/OIF Patients



# Localized Cutaneous Leishmaniasis



# Localized Cutaneous Leishmaniasis (cont.)



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# Localized Cutaneous Leishmaniasis (cont.)



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# Localized Cutaneous Leishmaniasis (cont.)



# Mucocutaneous Leishmaniasis



- ★ Espundia
- ★ Most commonly reported in the New World with *L. braziliensis* and *L. panamensis*
- ★ 1-3% of patients of all infected patients

# Espundia

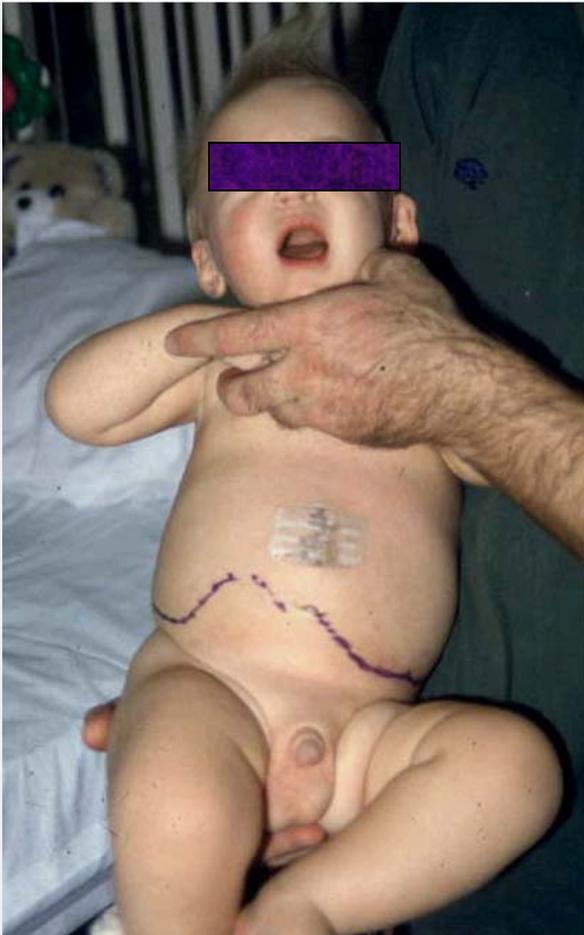


# Visceral Leishmaniasis



- ★ Kala-azar (Hindi for black sickness)
- ★ Fever
- ★ Enlarged liver and spleen
- ★ Anemia
- ★ Usually affects children
- ★ Increasingly reported in HIV patients

# Visceral Leishmaniasis (cont.)



# Diagnosis



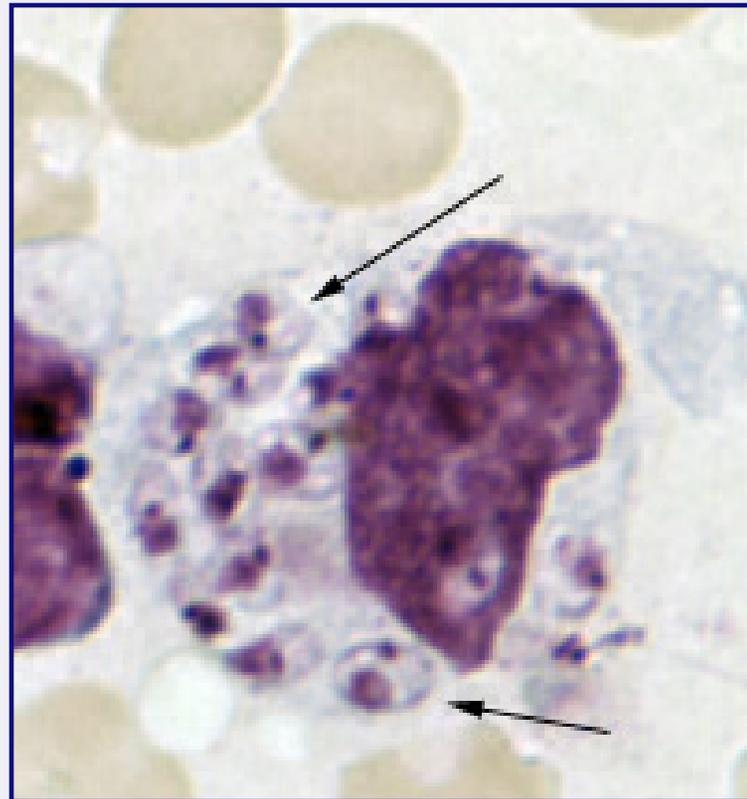
## ★ Cutaneous Disease

- Tissue sample (scraping, aspirate or punch biopsy) for smear and culture
  - Sensitivity 75-90%
  - PCR

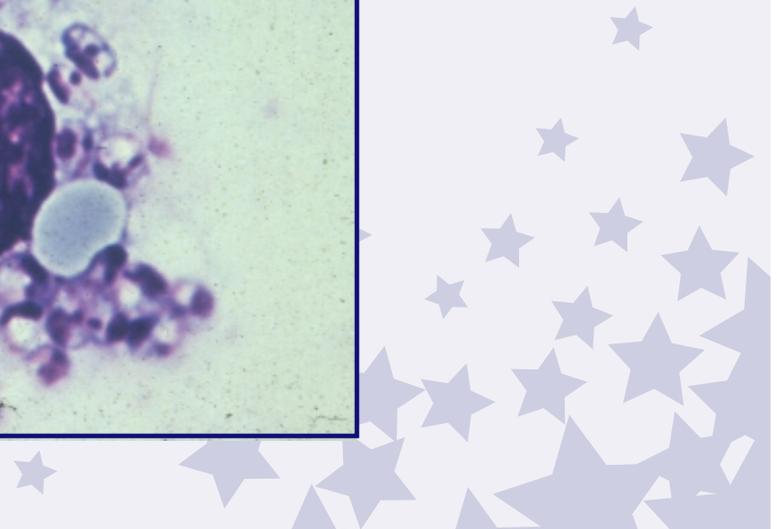
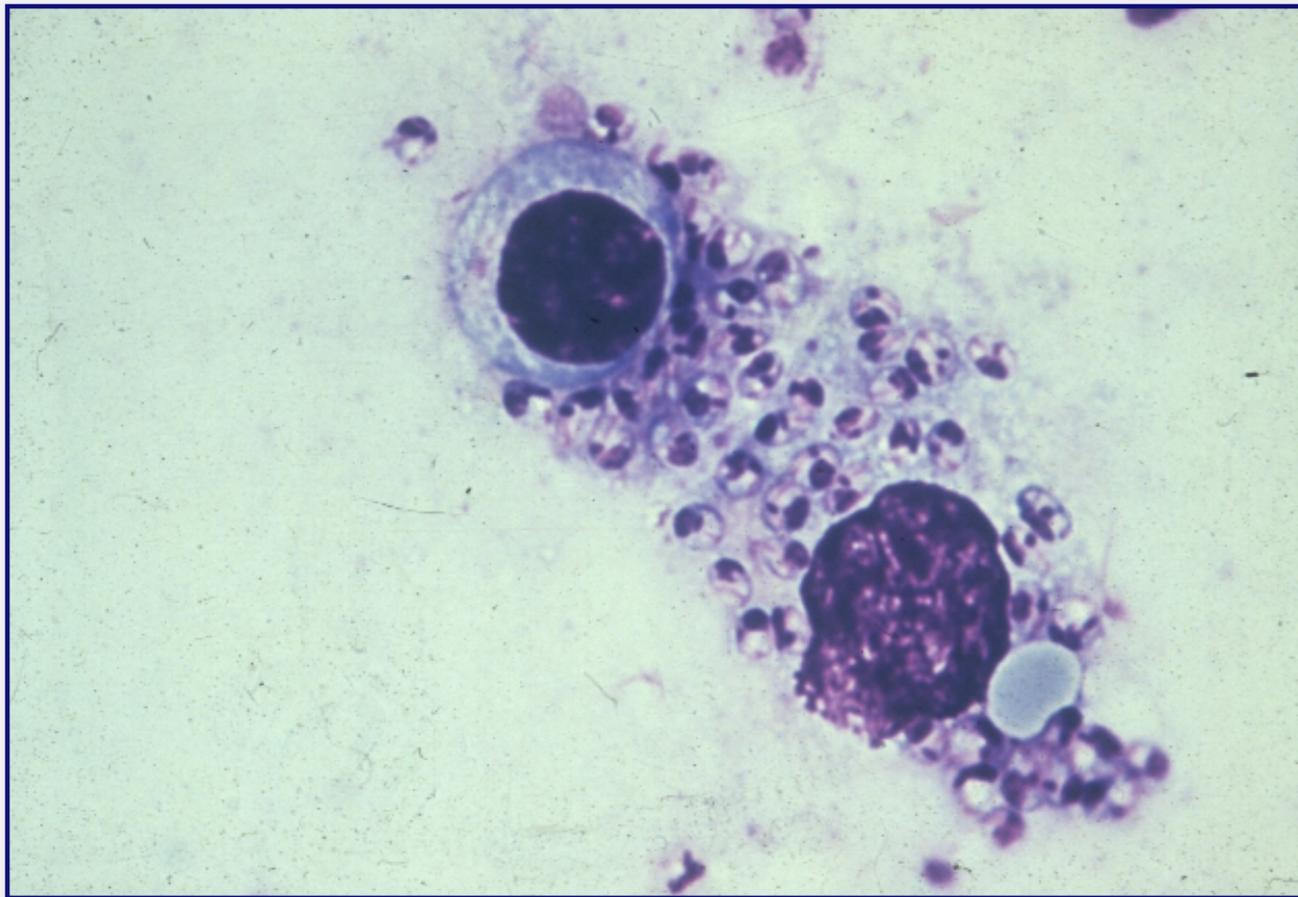
## ★ Visceral Disease

- Bone marrow biopsy or splenic aspirate for smear and culture
- Serology (rk39, various ELISAs)
- PCR

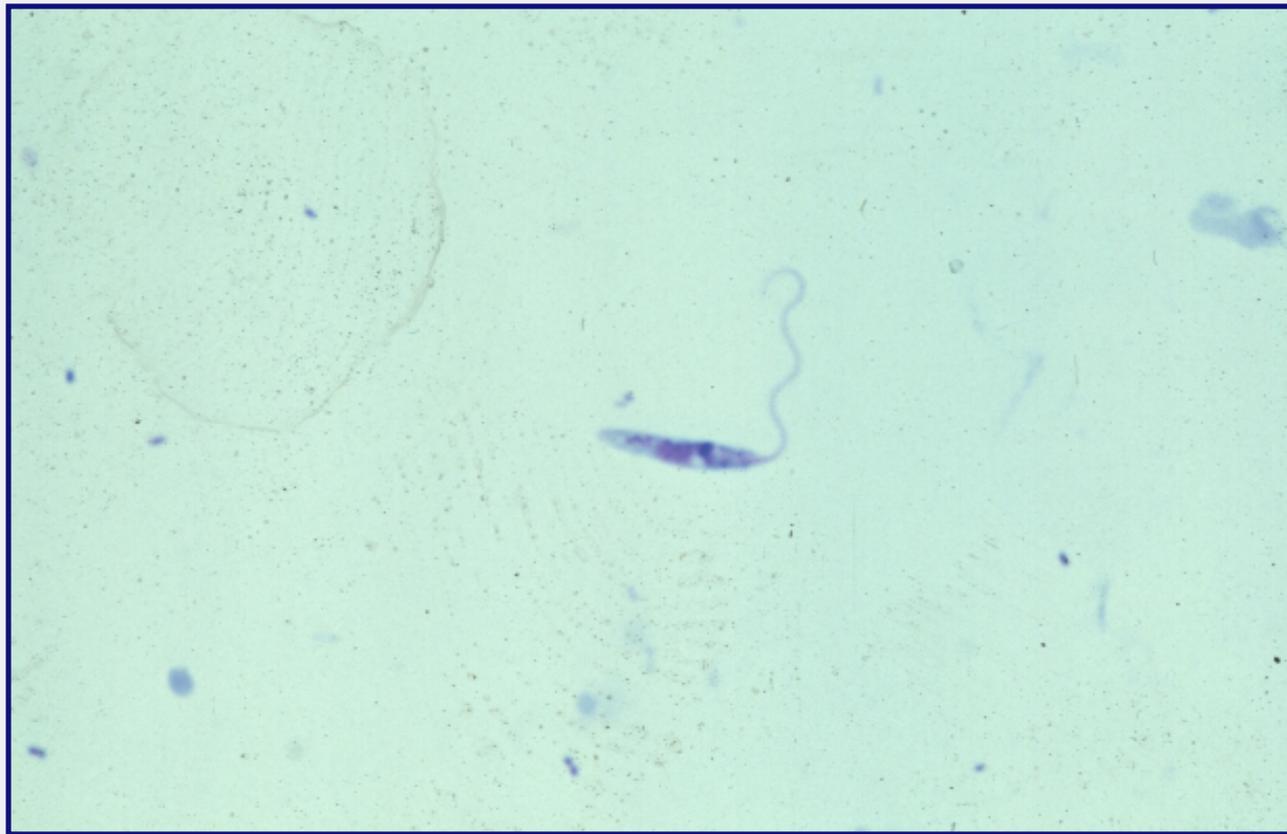
# Diagnosis Histopathology



# Diagnosis Histopathology (cont.)



# Diagnosis Culture



# Treatment-Cutaneous Disease



- ★ Most lesions go away in 5-6 months even without therapy
- ★ Local therapy (freezing, burning) for small lesions
- ★ Fluconazole once a day for 6 weeks
  - ~80% effective at 3 months (versus 34% in the placebo group)

# Treatment-Cutaneous Disease (cont.)



- ★ Sodium stibogluconate (Pentostam)
  - Not licensed by the FDA
  - Extensively used in other countries
  - 20mg/kg/d IV for 10-20 days
  - >90% cure
  - Elevations in pancreas enzymes (97%), joint pains (58%) and liver irritation (67%)



# Treatment-Visceral Disease

## ★ AmBisome (liposomal amphotericin)

- 3mg/kg/d on days 1-5, 14 and 21
- Only drug approved by the FDA

## ★ Pentostam

- 20mg/kg/d for 28 days

# Summary



- ★ Most likely presentation of leishmaniasis in a returning soldier would be cutaneous leishmaniasis
- ★ Chief complaint: non-healing skin lesion



# Summary (cont.)



- ★ Suggest empiric routine care (antibiotics, wound care)
- ★ If no improvement after 2 weeks, then refer to WRAMC for evaluation
- ★ WRAMC assets:
  - Diagnosis
    - AFIP (Geographic Infections Branch)
    - WRAIR (*Leishmania* culture and PCR)
  - Treatment
    - IND for Pentostam
  - Infectious Disease Clinic, WRAMC 202-782-6740

# Questions, Information, Assistance



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