

Parasitic Infections of the Skin & Soft tissue

A wide range of parasitic infections can involve the skin and subcutaneous tissues.

- Transient
- Localized

primary site of infection

or

secondary invasion

All parasitic groups have species which can involve the skin or subcutaneous tissues

PROTOZOAN INFECTIONS

Transient

- African trypanosomiasis
- American trypanosomiasis
- *Visceral leishmaniasis*

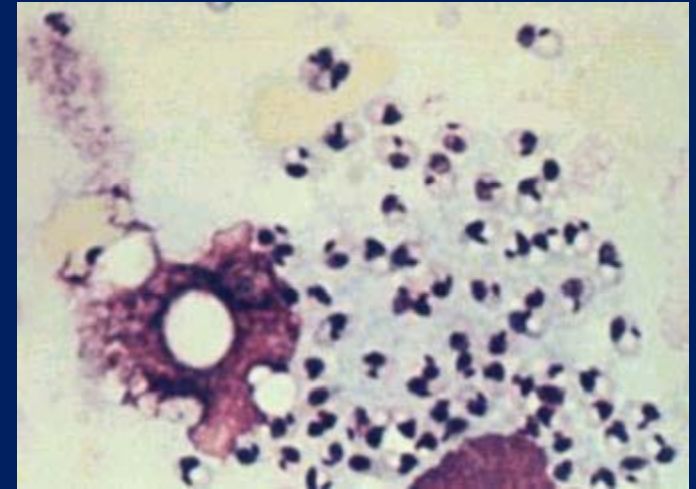


Localized

- Cutaneous leishmaniasis
- *Entamoeba histolytica*
- *Balamuthia mandrillaris*
- *Acanthamoeba*



Diagnosis of Cutaneous Leishmaniasis



The ability to detect parasites depends on:

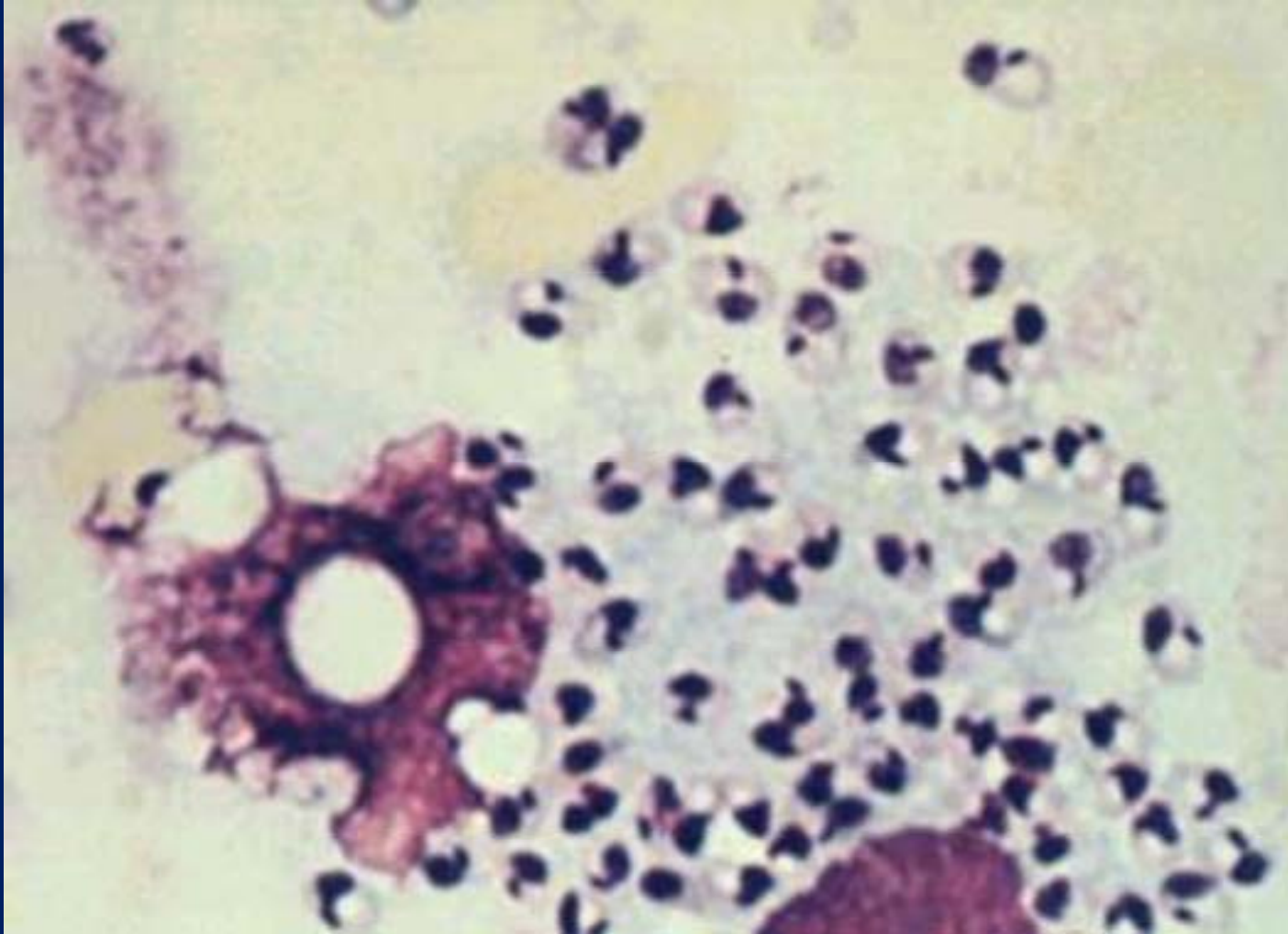
- The number of amastigotes present
- The level of the host immune response
- The absence or presence of bacterial and/or fungal contamination within the lesion
- Whether the specimen is collected from an active or healing lesion.

Diagnosis of Cutaneous Leishmaniasis

Specimen Collection.

- These lesions should be thoroughly cleaned with 70% alcohol
- Necrotic debris should be removed to prevent the risk of bacterial and/or fungal contamination of the specimen.
- Specimen should be taken from the advancing margin of the lesion; the central portion of the ulcer contains nothing but necrotic debris.

After staining



TREMATODE INFECTIONS

Transient

- cercarial dermatitis
swimmer's itch / pelican itch

Trichobilharzia sp.



CESTODE INFECTIONS

may cause subcutaneous lesions in their larval stages.

- *Taenia solium*
- *Echinococcus granulosus*



NEMATODE INFECTIONS

Transient

- ground itch/dew itch
- sandworm/cutaneous larva migrans/creeping eruption
(*Ancylostoma braziliense*, *A. caninum* etc)
- *larva currens*

S.s



Localized

- *Gnathostoma*

filarial species:

- *Loa loa*,
- *Onchocerca volvulus*,
- *Mansonella streptocerca*
- *Dirofilaria* spp.
- *Dracunculus medinensis*

ARTHROPOD INFECTIONS/INFESTATIONS OF THE SKIN

Louse (Anoplura)

Pediculus humanus corporis

P. h. capitis

Pthirus pubis

Blood-feeding bugs

Fleas

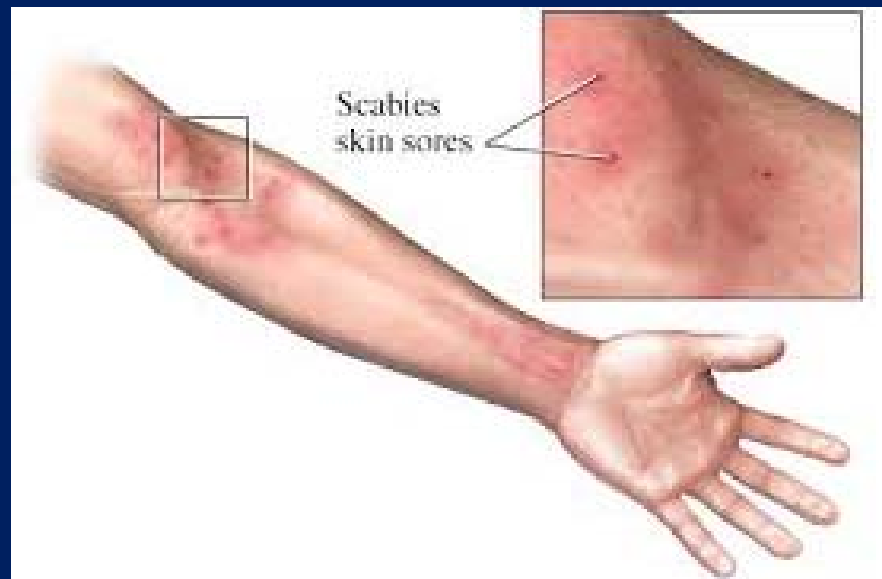
Blood-feeding flies

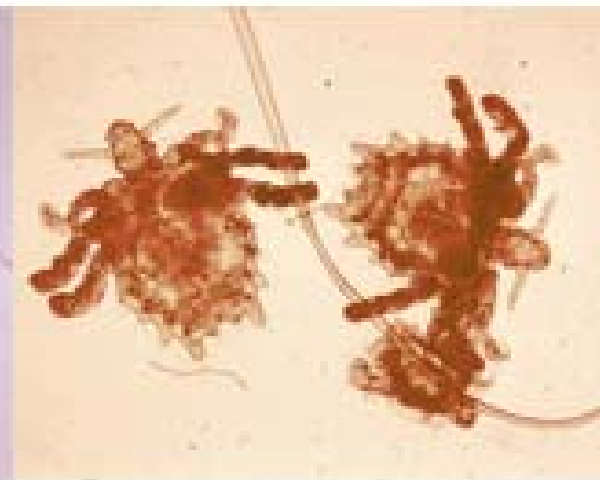
Myiasis

Mites

- *Sarcoptes scabiei*
- *Demodex folliculorum*

Ticks

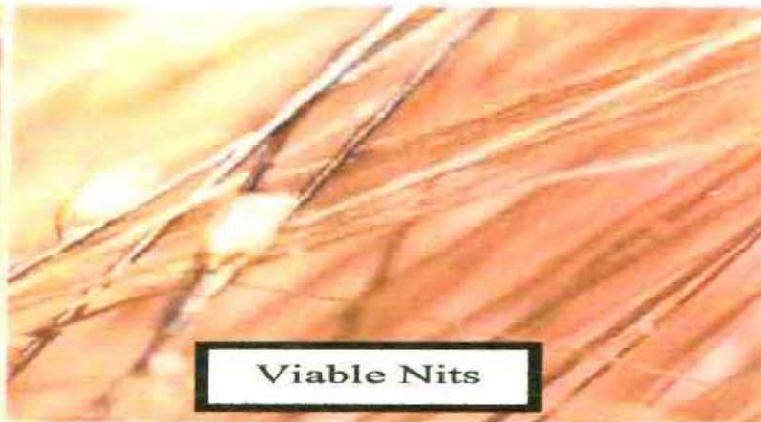




HEAD LICE: DIFFERENTIAL DIAGNOSIS



Empty Nit Case



Viable Nits



Hair Spray Droplets



Dandruff



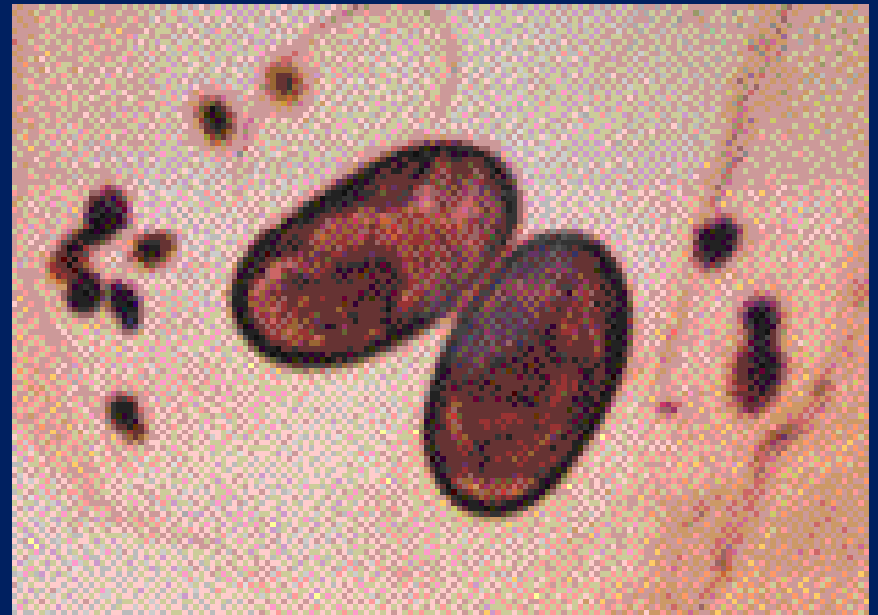
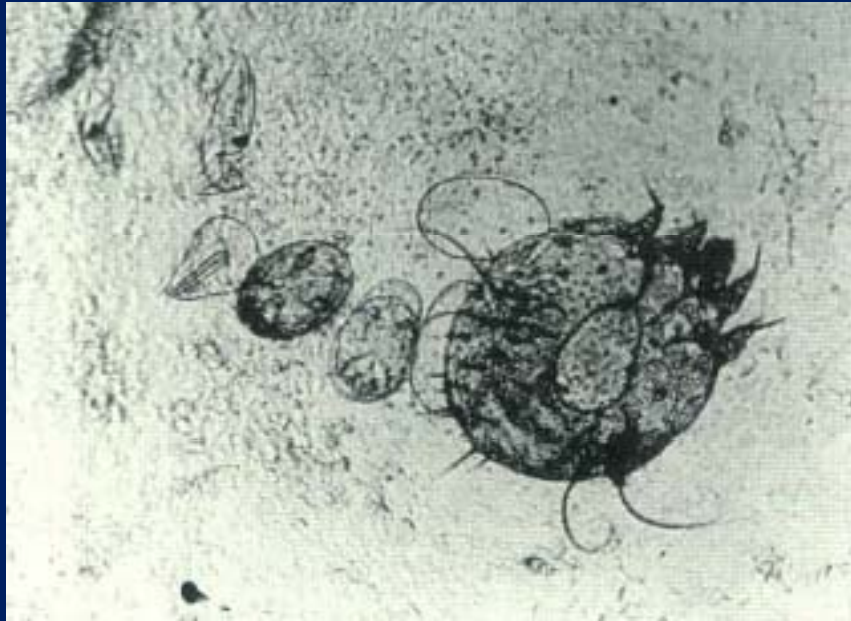
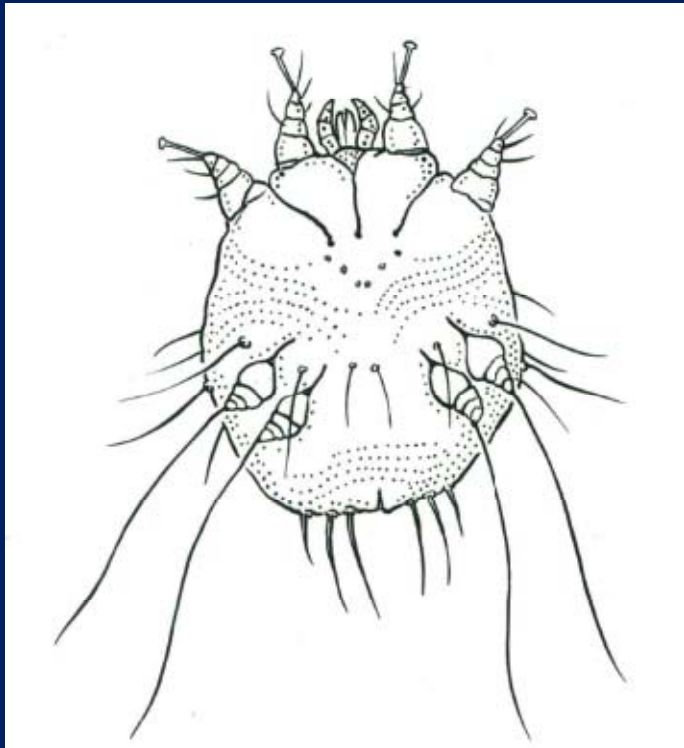
Hair Casts

Specific techniques for recovery of the mites

- Skin-scraping technique.

demonstration of the mites, eggs, or scybala (fecal pellets).

1. Place a drop of mineral oil on a sterile scalpel blade. (Mineral oil is preferred to potassiumhydroxide solution or water. Mites adhere to the oil, skin scales mix with the oil, the refractility differences are greater between the mite and the oil, and the oil does not dissolve fecal pellets.)
2. Allow some of the oil to flow onto the papule.
3. Scrape vigorously six or seven times to remove the top of the papule. (There should be tiny flecks of blood in the oil.)
4. Transfer the oil and scraped material to a glass slide (an applicator stick can be used).
5. Add 1 or 2 extra drops of mineral oil to the slide and stir the mixture. Any large clumps can be crushed to expose hidden mites.
6. Place a coverslip on the slide, and examine (first on low power). The adult mites range from approximately 215 to 390 pm in length, depending on sex. The eggs are 170 pm long by 92 pm wide, and the fecal pellets are about 30 by 15 pm. The fecal pellets are yellow-brown.



- **Plastic box or petri dish method.**

If mineral oil preparations of skin scrapings fail to demonstrate the mites, the encrusted skin scrapings, etc., can be placed in a small plastic box or small petri dish. The container should be left undisturbed at room temperature for 12 to 24 h.


Away from the living host, the mites drop to the bottom of the box or dish and can be seen with a magnifying glass or dissecting microscope.

Epidermal parasitic skin diseases (EPSD)

- Scabies
- pediculosis (head lice, body lice, pubic lice)
- tungiasis (sand flea disease)
- hookworm-related cutaneous larva migrans

In a nutshell

1. Skin pathology often provides important clues to systemic infections.
2. Parasitic infestations are common in the tropics due to a combination of heat, humidity and ultimately poor socioeconomic and health care conditions.
3. Parasitic infections can be solely confined to the skin, as seen with human scabies, cutaneous larva migrans, the chigger flea, cutaneous myiasis and cutaneous leishmaniasis.
4. Parasites not confined to the skin include onchocerciasis, loiasis, the guinea worm, schistosomiasis, cutaneous involvement in trypanosomiasis.

A black and white photograph of a boat on a body of water, framed by bare tree branches at the top. The text is centered in the middle of the image.

به جای شکوه از تاریکی چراغی برافروزم