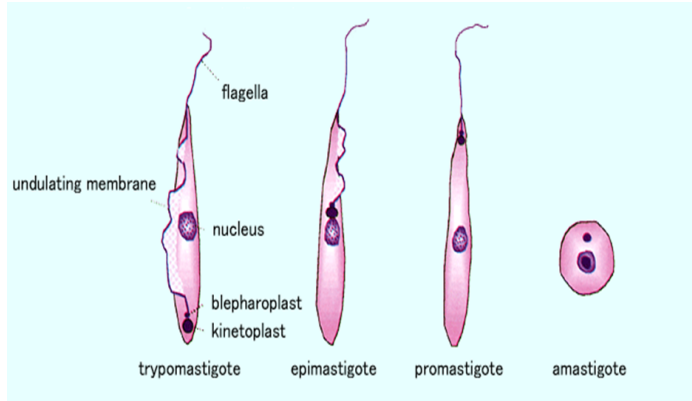


Hemoflagellates

Leishmania

You have to differentiate the different types in this picture



Trypomastigote (الفلاجيلا تبدأ من أول)
 Epimastigote (الفلاجيلا تبدأ من الوسط)
 Promastigote (الفلاجيلا تكون فقط في الجزء الأخير)
 Amastigote (مافيه فلاجيلا)

Leishmania transmitted by **Sand fly** (ممکن نلقاها في الخرج)

Investive stage: Promastigote (taken by macrophages)

Diagnostic stage: Amastigote (LD bodies (Leishman-Donovan bodies))

Types of Leishmania

Cutaneous leishmaniasis
*Leishmania tropica**
*Leishmania major**
Leishmania aethiopica
Leishmania mexicana

Mucocutaneous leishmaniasis
Leishmania braziliensis

Visceral leishmaniasis
*Leishmania donovani**
*Leishmania infantum**
Leishmania chagasi

*endemic in Saudi Arabia

Cutaneous leishmaniasis

Sand fly causes painless papule at the site of its bite. mainly in face, it causes wet or dry ulcer

Leishmania tropica: Dry ulcer

*Leishmania major: in animal and humans, it's hard to control organisms that carried by animals, it causes **wet ulcer***

Oriental sore (most common) classical self-limited ulcer (عادة بالدول الشرقية)

uncommon

Leishmania aethiopica في أثيوبيا causes **Diffuse cutaneous leishmaniasis**

Leishmaniasis recidiva (lupoid leishmaniasis) severe immunological reactions leading to persistent dry skin lesions

Mucocutaneous leishmaniasis



starts as a pustular swelling in the mouth or on the nostrils.

The lesion become ulcerative في naso- pharyngeal mucous membrane.

Secondary infection is very common with destruction of the nasal cartilage and the facial bone.

Cutaneous & mucocutaneous leishmaniasis diagnosis

swap isolated from the margin of the ulcer on Giemsa stain shows (Amastigote), on NNN (Promastigote).

بتشغل مثل الساند فلاي عشان كذا نشوف بروماستقويت ** NNN

Leishmanin test (Montneg Test), is useful.

Smear: Giemsa stain – microscopy for LD bodies((Leishman-Donovan bodies, amastigotes).

Skin biopsy: microscopy for LD bodies or culture in NNN medium for promastigotes.

Visceral leishmaniasis (Kala Azar)

Leishmania **infantum** mainly affect **children**

Leishmania **donovani** mainly affects **adults**

IP (4-10 months)

Early symptoms: low grade fever, malaise, sweating.

Later stages: fever intermittent, liver enlargement or spleen enlargement or hepatosplenomegally because of the hyperplasia of the lymphoid –macrophage system. (تحت تعیش بالسبيلين)

Presentation: Fever, Splenomegaly, hepatomegaly, hepatosplenomegaly, Weight loss, Anaemia, Epistaxis, Cough, Diarrhoea

Untreated disease can be fatal

After recovery it might produce a condition called post kala-azar dermal leishmaniasis (PKDL)



Visceral leishmaniasis diagnosis

Same as cutaneous & mucocutaneous but the biopsy is taken from spleen, bone marrow (aspiration) or lymph nodes (tissue biopsy)
then we can use Giemsa stain to look for LD bodies (amastigotes) or culture in NNN medium to see (promastigotes).

Immunological tests:

Specific serologic tests: Direct Agglutination Test (DAT), ELISA, IFAT

Skin test (leishmanin test) for survey of populations and follow-up after treatment.

(immunological tests اهم شيء نعرف ان عندنا)

Trypanosomiases

African sleeping sickness

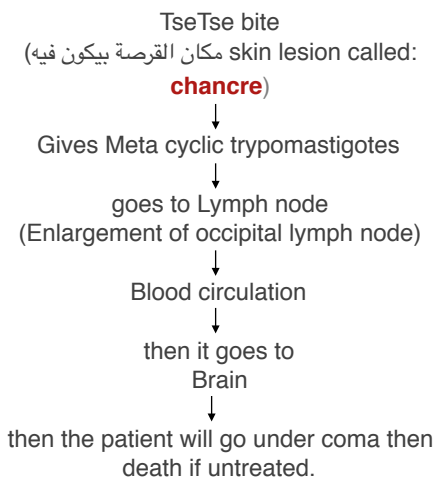


(sleeving disease)

كان في وقت الاستعباد ولما كانت امريكا تاخذ العبيد بالسفن فاللي يكتشفون فيه هالمرض يرمونه من السفينة لانه من اعراضه ينام كثير وبعدين يدخل غيبوبة ثم يموت فما يستفيدون منه ودلالة هالمرض هو enlargement of lymph node in the occipital region (winterbottom) ويسمى

Trypanosoma brucei gambiense

Transmitted by **Tsetse Fly**
West and Central Africa



**Trypomastigote could be in human and animals but it causes disease in humans only so the animals are carriers and the fly could transmit the disease from animals to humans.

Stages:

Skin stage: chancere which resolve in 2-3 weeks.

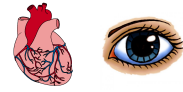
Systemic Haemato-lymphatic stage: intermittent fever, headache and generalized lymphadenopathy mainly in the cervical and sub occipital region (Winterbottom's sign), anaemia, generalized organ involvement.

Central nervous system stage (CNS): Meningoencephalitis. daytime sleeping, psychological changes, tremors, convulsions and finally coma.

(Development of the disease more rapid in Trypanosoma brucei rhodesiense)

Diagnosis: CSF lumbar puncture

Chaga's disease



ربي عاقب الأمريكان وجاهم نفس المرض بس بمسبب ثاني وناقل ثاني

Trypanosma cruzi

Transmitted by **Reduviid (Triatomine) bug**
Central and south America

Stages:

Cutaneous stage (chagoma): focal lymphangitis and oedema at the site of parasites entry (chagoma)

Systemic Stage: parasites enter the blood stream and causes ocular lesion (**Romana's sign**) mainly on the face near the eyelids, it produces a swelling of the eye and temporal region with conjunctivitis and also find their way mainly to the cardiac muscles cells. The most constant feature of the cardiac disease is cardiomyopathy, in severe cases can lead to partial or complete heart block which may lead to cardiac failure.

The first event is an inflammatory response. Following inflammation, cellular damage occurs. Finally, in the body's attempt to recover from the cellular damage, fibrosis begins in the cardiac tissue

NOTE: Parasite when free in blood stream in form (TRYPTOMASTIGOT) but in the tissue it become in form of (Amastigote).

Diagnosis:

Blood film

Serology: IFAT

Xenodiagnosis: feeding bugs on a suspected cases.

