



Hemepath Case 45: 26-Year-Old Male

HISTORY

A 26-year-old male exchange student from Central Africa presents with testicular pain and cloudy urine. On physical examination, the patient is noted to be feverish. The right scrotum and epididymis are enlarged and tender to palpation. The spermatic cord is thickened. Painful inguinal lymphadenopathy and mild edema of the lower limbs are also noted.

CBC

Hgb (g/L)	Low
MCV	N
WBC	Mild increase. Differential shows mild eosinophilia
Plt	N

DESCRIPTION OF SLIDE

Peripheral Blood Smear

The peripheral blood smear shows hypochromatic RBCs, including target cells (see circles) and sickle cells (see rectangles). Platelets and WBCs are generally unremarkable, although there may be a mild eosinophilia. In the feather edge of this blood film are several worms (see arrows), which are diagnostic of filariasis.

*** To see the slide annotations in Imagescope, click on VIEW, then ANNOTATIONS, and then on the "eye" icon adjacent to the word "Layers". In the "Layer Attributes" box, a brief description of the annotations is provided. You may also click on individual layer region (e.g. region 1) in the "Layer Regions" box to locate each annotation – this is especially helpful in identifying annotations when the slide is not zoomed in. ***

MORPHOLOGICAL DIAGNOSIS

Filariasis

DISCUSSION

Filariasis refers to a parasitic infection caused by nematodes of the order Filariidae. Patients may present with a range of symptoms, depending on the species of the parasite and the body site affected, although the lymphatic system and the skin are most commonly involved. The worms utilize mosquitoes as vectors and are endemic in certain tropical and subtropical countries, such as Central Africa.

The patient in this case exhibits symptoms and signs consistent with lymphatic filariasis (caused by *Wuchereria bancrofti*, *Brugia timori*, or *Brugia malayi*). Larvae migrate through the bloodstream into the lymphatic system and lymph nodes, where they mature and subsequently stimulate inflammation and obstruct lymphatic flow. This results in fever, lymphangitis, lymphadenitis, in addition to swelling of the genitals and extremities. Chyluria (cloudy urine), reported by our patient, is seen in chronic infections.

Filariasis is diagnosed by the presence of microfilariae in the peripheral blood. Eosinophilia may be seen in parasitic nematode infections.

Based on RBC morphology, this patient may also have sickle cell anemia.