

“A Hitch Hiker’s Guide to the Blood Stream”

Chris Lee, Senior Biomedical Scientist UHW.

Introduced by Dr Andrew Goringe, Consultant Haematologist, UHW.

Mr Lee’s talk was on parasitic infections. He started by dedicating his talk in memory of Semu Jembere who worked in Public health in Gondar, Ethiopia. Mr Lee had spent some time working with Semu and Semu was the person who had sparked his interest in parasites.

Mr Lee reviewed the different types of malaria parasites and showed a map of their distribution across the world:

Plasmodium Falciparum

Plasmodium Vivax

Plasmodium Ovale

Plasmodium malariae

He also informed us that a 5th plasmodium had now been found – Plasmodium Knowlesi.

The importance of being aware of the chance of dual infection was discussed and the importance of considering “airport” malaria.

Mr Lee showed photographs of the mini ELISA kits that are used in the laboratory. Each kit costs approximately £10. There can be cross reactivity with rheumatoid factor which leads to some false positive results.

Thick films can very time consuming but are very useful. Mr Lee described how blood films must be checked thoroughly as multiple forms of parasite can be found in one cell – it is important to report on mixed infections and try and give a percentage of each form present (a high plasmodium falciparum percentage can indicate a high risk of developing malaria).

Plasmodium falciparum:

Cerebral malaria most often seen in falciparum infection. A slide was shown of brain blood vessels blocked with falciparum parasites. Kidney damage is also associated with falciparum, haemolysis producing haemoglobinuria – blackwater fever.

Plasmodium vivax:

Slides of blood films showing *Plasmodium vivax* were shown – with characteristic Schuffner's dots.

Plasmodium ovale:

Slides showing the typical oval trophozoite in slightly enlarged red cells with fimbriae on the edge of the cells were shown.

Plasmodium malariae:

Blood films of *Plasmodium malariae* usually show scanty parasites, the red cells are not enlarged and there are no Schuffner's dots.

After discussing the different forms of malaria infections, Mr Lee briefly discussed the following infections and their blood film appearances.

Trypanosomes :

African trypanosomiasis (sleeping sickness), American trypanosomiasis (Chagas' disease) – named after Carlos Chagas, the son of a mining engineer from Rio de Janeiro. Chagas' disease is caused by *Trypanosoma cruzi* – it can go straight into the body without a vector and laboratory staff have to be careful.

Wuchereria bancrofti :

Adult worms physically obstruct the lymph vessels, causes elephantiasis. Blood films should be taken a few hours or so each side of midnight as there are greater number of worms present at night.

Leishmania Donovanii :

Cutaneous and visceral forms of the disease.

Mr Lee showed a bone marrow slide of a 15 year old girl with pancytopenia who was being investigated for ?leukaemia. Leishmania donavani were seen in the bone marrow specimens.

Mr Lee completed his talk by thanking Geoffrey Kulbaba (editor of “New Vision”,Kampala,Uganda), Alun Thomas Haematology Dept UHW (for his technical help) and Dr Stephen Ledbetter (for providing some slides).