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Katayama syndrome : A group fever

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Abstract
We report on Katayama syndrome, also known as Safari fever or Acute Schistosomiasis, in five Turkish expatriates living in Madagascar. Katayama syndrome should be considered and empirically treated, in cases of group fever following exposure to untreated water by expatriates living in Schistosomiasis endemic areas.

Introduction
Katayama syndrome, also known as Safari Fever or Acute Schistosomiasis, is an early manifestation of infection with *Schistosoma* species in non- immune individuals exposed to cercariae infested water in endemic regions.[1,2] Although shistosomiasis is prevalent in Madagascar, no case of Katayama Syndrome has previously been reported. We report on Katayama Syndrome in Madagascar for the first time.

Case report
A 30 year old Turkish male who had resided in Madagascar for approximately one year, presented with fever ranging from 39 to 40° C for the preceding two weeks. History revealed the patient resided in Ampefy, in the central west region of Madagascar, a Schistosomiasis endemic area.[3,4] He also reported bathing in untreated water approximately two to three weeks prior to the onset of his symptoms. He denied pruritus, but reported asthenia, diarrhoea, dyspnoea, dry cough, headache, and pleuritic chest pain. Physical examination was normal. Laboratory investigations revealed: normal serum transaminase; normal blood and stool cultures; and negative malaria testing. However, Erythrocyte Sedimentation Rate (ESR) and C-reactive protein values were elevated (60 mm, and 80 mg/L, respectively). dditionally, hypereosinophilia was present at 1,300 x 10^6/L as well as *Schistosoma mansoni eggs*, which were detected upon stool microscopy. Katayama syndrome was diagnosed, and the patient was treated with a single dose of Praziquantel at 40 mg/kg. The patient's symptoms resolved. Following successful diagnosis and treatment, two of the patient's associates came forward and reported similar symptoms with history of bathing in the same untreated water. Two more associates reported bathing in the untreated water but were without symptoms. Anti-schistosomal antibodies were discovered in all four individuals. They all received Praziquantel at the same 40 mg/kg dose with favourable outcomes.

Discussion
We believe this to be the first case of Katayama Syndrome reported in Madagascar, the syndrome being rare in chronically exposed populations.[2] Our patients are Turkish expatriates who resided in a Schistosomiasis endemic area within Madagascar. The index patient presented with fever, which is present in up to 71 % of Acute Schistosomiasis cases[1,6] and occurs approximately 14 to 70 days after exposure to contaminated water. In our patient fever appeared 34 days after exposure. The second most common parasitic disease after malaria is Schistosomiasis [5] and we were able to rule out malaria because of negative malaria testing. In addition to fever, the patient also reported asthenia, abdominal pain and dyspnoea which are typical for the "invasive" phase of Schistosomiasis.[1,2]

Our patient also reported diarrhoea, so *Shigella, Entamoeba histolytica, Salmonella typhi and paratyphi* were ruled out by stool microscopy. The strongest information provided in the patient's history however, was exposure to untreated water in a Schistosomiasis endemic area and the presence of similar symptoms in associates, which defined *Group fever.*[7] Even though everyone in the group was not symptomatic, all received serologic investigation and were found to have anti-schistosomal antibodies. Up to 42.5% of Katayama Syndrome patients can be asymptomatic and 87.6 % of infected patients display anti-schistosomal antibodies.[6] Praziquantel is the standard treatment for Katayama Syndrome[1] and a single dose was sufficient to resolve all symptoms in our patient. Treatment prevents Chronic Schistosomiasis and its possible sequelae: tumours of the bladder, tumours of the colon, central nervous system impairment and liver cirrhosis.[2,6] In cases involving expatriates residing in schistosomal endemic areas, who present with fever after bathing in plain water, Katayama Syndrome should be considered and empirically treated.

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