To the Editors:

Ultrasonographic visualisation of live *Wuchereria bancrofti* adult worms *in situ*

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Introduction

Living *W. bancrofti* adult worms were visualised in their natural habitats for the first time in 1994 using ultrasonography [1]. Subsequent studies have shown that adult filarial worms can be visualised in the superficial lymphatics of men, women and children with bancroftian or brugian filariasis [2,3]. Ultrasonic visualisation is possible because the worms move actively inside the lymphatic vessel and this peculiar pattern of movement is called the 'filarial dance sign' (FDS). Sequential ultrasonic examinations have revealed the stability of the location of these adult worm nests [4].

We visualised adult filarial worms in the intra-scrotal lymphatics of two microfilaraemic males using a 7.5 MHz soft tissue transducer (Toshiba) and a semi portable ultrasound machine. Both cases of microfilaraemia were detected during a night blood screening programme conducted in September 2009. Both microfilaraemics were in their mid-thirties and were long term residents of Ragama with microfilaria (mf) counts of 20/20µl of blood.

Case 1 had bilateral lower limb lymphoedema and a past history of hydrocelectomy while case 2 was asymptomatic. They were subjected to scrotal ultrasound examination during daytime. Two 'worm nests,' i.e. dilated lymphatics with characteristic pattern of movement of worms, were visualised in case 1 while case 2 had a single worm nest and subclinical bilateral hydroceles detected by sonography. Every worm nest detected in the two-dimensional b-mode search (which shows the worm movement against time or the 'filarial dance sign') was confirmed by one-dimensional m-mode imaging where moving worms were seen as wavy bands. The ultrasound findings were documented by digital photographs and digital video sequences. The latter may be viewed at: http://174.132.189.92/~medkel/medkel.kln/dept/parasit/parasit.htm?clips.html.

Species identification based on morphology of mf on Giemsa stained thick blood films and detection of circulating filarial antigens by immunochromatography using NOW® Filariasis rapid test for *W. bancrofti* antigen (Binax, Inc. USA) confirmed the infecting species as *W. bancrofti*.

Thus ultrasonographic visualisation of adult filarial worms is a potential non-invasive diagnostic tool and may be useful in assessing the efficacy of filaricidal drugs. Despite the completion of a five year mass drug administration programme by the Ministry of Health in 2007, there are still patients with active lymphatic filariasis, who are sources of infection for continued transmission of bancroftian filariasis in Sri Lanka.

References

1. Amaral F, Dreyer G, Figueredo-Silva J, *et al*. Live adult worms detected by ultrasonography in human bancroftian filariasis. *American Journal of Tropical Medicine and Hygiene* 1994; **50**: 753-7.

2. Mand S, Debrah A, Batsa L, Adjei O, Hoerauf A. Reliable and frequent detection of adult *Wuchereria bancrofti* in Ghanian women by ultrasonography. *Tropical Medicine and International Health* 2004; **9**: 1111-4.

3. Mand S, Supali T, Djuardi J, Kar S, Ravindran B, Hoerauf A. Detection of *Brugia malayi* filariae by ultrasonography in humans in India and Indonesia. *Tropical Medicine and International Health* 2006; **11**: 1375-81.

4. Dreyer G, Amaral F, Noroes J, Medeiros Z. Ultrasonographic evidence for stability of adult worm location in bancroftian filariasis. *Transanctions of the Royal Society of Tropical Medicine and Hygiene* 1994; **88**: 558.

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