Research letters


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To the Editors:

Ultrasonographic visualisation of live Wuchereria bancrofti adult worms in situ

Ceylon Medical Journal 2011; 56: 82-83

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 20/20 μl 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


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To the Editors:

Nerve tube in peripheral nerve repair

Ceylon Medical Journal 2011; 56: 83-84

Primary nerve repair is the preferred method after a nerve transection. Properly timed repair using microsurgical techniques give good results. Conventional nerve graft is an autologous nerve graft. An autologous sensory nerve is usually used as there are few expendable motor nerves. Nerve graft is oriented in reverse fashion and multiple cables are used depending on the circumference of the injured nerve. Sural nerve is the commonly used autologous nerve graft. Sural nerve harvesting is always associated with donor site morbidity. Nerve transfers, end to side nerve repair, vascular grafts and muscle flaps are also used with variable outcome [1].

Nerve tube is an alternative. This is a biodegradable transparent tube which comes in different diameters. Technique of nerve repair is simple (Figure 1). After preparing the severed nerve ends, those are fed into a proper-sized nerve tube with fine non-absorbable sutures [2].

Figure 1. Tubular nerve graft

Compared to the conventional method nerve tube has no donor site morbidity and requires less operating time due to the simplicity of technique. Disadvantages are the cost of the nerve tube and inability to use for nerve gaps of more than 30 mm [3].

A 22-year old navy soldier presented with loss of sensation over radial aspect of his left index finger. This was after laceration over the radial side of his left palm 8 months ago. On examination he had a healed scar with positive Tinel's sign over it. A damaged digital nerve was suspected.

Exploration was done under general anaesthesia in a bloodless field. A 20 mm gap was found following preparation of nerve edges. Coaptation was done with a 100% synthetic (lactide-caprolactone polymeric material) nerve tube of 2 mm diameter and 30 mm in length. Edges were sutured with 7/0 polypropylene and skin approximated with 5/0 polypropylene. Patient was assessed regularly using progressive Tinel's sign, two point discrimination and monofilament sensory test.

Nerve tube is a good alternative to avoid donor site morbidity in peripheral nerve repair of short distance (< 30mm). As the cost of the nerve tube is high, it is not a gain without a loss [4].

References

