

**ULTRASTRUCTURE OF REPRODUCTIVE SYSTEM OF FEMALE
Wuchereria bancrofti (NEMATODA: FILARIOIDEA)
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Lymphatic filariasis has been identified by the World Health Organization as the second leading cause of permanent and long-term disability worldwide [1] causing also severe social and psychological consequences [2]. It is estimated that more than one billion are at risk of acquiring infection in tropical countries. The study of the reproductive system of filariids is an important tool to understand the oogenesis, fertilization, and development of these nematodes. However, few studies were made possible with this subject at ultrastructural level. The eggshell of *Brugia malayi* is identical in morphology to the microfilarial sheath [3]. Microfilariae of different species were observed by transmission electron microscopy (TEM) [4, 5].

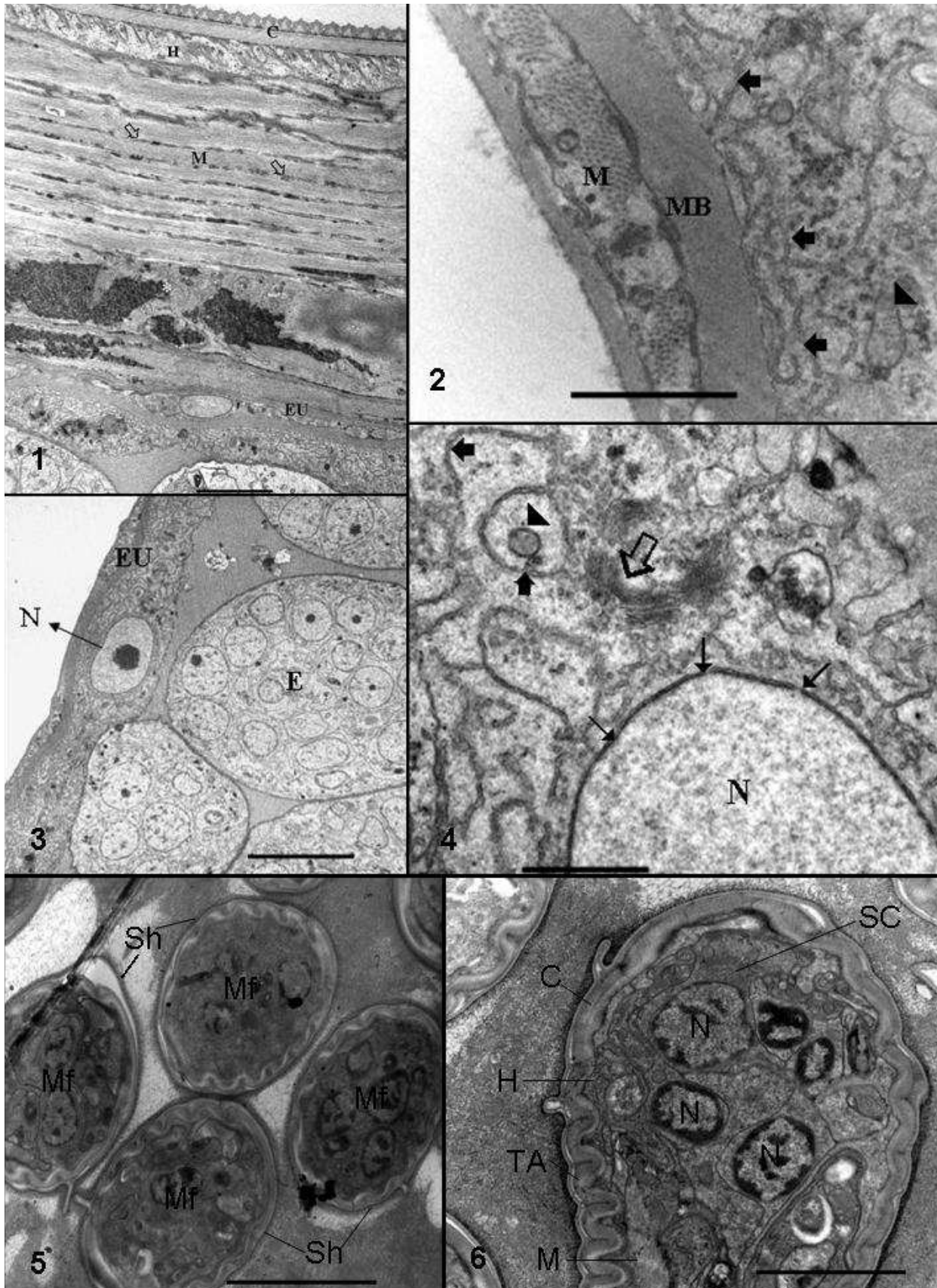
Patients underwent physical and ultrasound examinations to observe abnormalities in the lymphatic vessels and a local random movement characterized by filarial dance sign (FDS) [4]. Fragments of these abnormal vessels containing living adult filariae were surgically removed. For transmission electron microscopy, adults worms were washed in NaCl 0,9%, fixed in 2,5% glutaraldehyde + 4% paraformaldehyde in 0,1M Cacodylate buffer pH 7,2, post-fixed in 1% OsO₄ and 0,8% K₃Fe(CN)₆, dehydrated in a graded series of acetone, and embedded in Epon resin. Thin sections were collected on copper grids, counterstained with uranyl acetate and lead citrate and then observed with a Zeiss 906 TEM.

The reproductive system of *W. bancrofti* in transversal section was circular. It was composed of an epithelium surrounded by a basal lamina, which consisted of a single layer of elongate cells (Figs. 1, 3). The uterine wall consisted of circular and oblique thin muscular fibers surrounded by a basal lamina and the epithelium underlying the lamina (Fig. 2). In the epithelial cell, there were several organelles such as mitochondria, Golgi complex, endoplasmic reticulum, and nucleus with nucleolus (Figs. 2, 3, 4). Sometimes the uterine wall was adjacent to body wall (Fig. 1). Inside the uterus, were observed in the middle region of the female reproductive system the embryos cells surrounded by the eggshell (Fig. 3). The embryos grow and differentiate along the uterus and in the distal region of the female reproductive system; the final microfilariae development could be observed (Figs. 5, 6). These microfilariae were surrounded by an electron-dense sheath, not limited by membranes (Fig. 5). They presented a narrow cuticle with deep transversal annulations in longitudinal sections (Fig. 6). Underlying the cuticle the hypodermis was inconspicuous, beneath it was observed the contractile portion of the muscle cell (Fig. 6). Besides the hypodermal nucleus, the pseudocoelomic region presented a nucleated region constituting the subcuticular cells (Fig. 6).

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Legends: Transmission electron microscopy of *Wuchereria bancrofti*. 1- Uterine wall (EU) adjacent to the body wall layers: Cuticle (C), Hypodermis (H), muscle(M) with dense body (empty arrow). Bar 3 μ m. 2- Detail of uterine wall showing circular and oblique muscular fibers (m) surrounded by a basal lamina (MB). It was possible to observe an endoplasmic reticulum (full arrow), mitochondria (head arrow). Bar 2 μ m. 3- Nucleus (N) of uterine wall and embryo cells (E) inside uterus. Bar 3 μ m. 4- Detail of uterine wall showing a Golgi complex (empty arrow), nuclear pore complex (thin arrow), mitochondria (head arrow) and endoplasmic reticulum (full arrow). Bar 3 μ m. 5- Longitudinal section of microfilariae (mf) inside the uterus surrounded by electron-dense sheath (Sh). Bar 2 μ m. 6- Detail of microfilariae in longitudinal section. Each microfilaria presents a narrow cuticle (C) with deep transversal annulations (TA). Underlying the cuticle (C), each microfilaria presents a contractile portion of muscle cell (m) and the inconspicuous hypodermis (H) many nucleus (N) of subcuticular cells (SC). Bar 2 μ m.