

LYMPHOGRAPHIA

VASCULAR PATTERNS IN THE FILARIA-INFECTED CANINE LIMB

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Fig. 1: Chronic edema of the hock and foot of a dog infected with *Brugia pahangi* in the left rear limb.

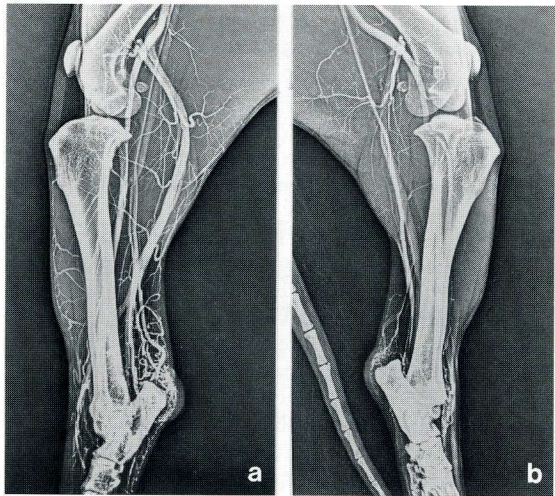


Fig. 2: Arteriograms of the edematous rear limb (a) and control limb (b) in a *B. pahangi*-infected dog.

One of 14 beagles maintaining an experimental infection of *Brugia pahangi* in the left rear limb developed edema 12 months postinfection (Fig. 1). Edema persisted in the limb for 11 months. Arterial (Fig. 2) and lymphatic (Fig. 3) patterns of infected and noninfected rear limbs were compared by xeroradiography. Limb arteries were visualized by injection of water-soluble radiopaque contrast medium (Conray 400, Mallinkrodt, St. Louis, MO) into the femoral artery; lymphatic vessels and nodes

were visualized five days later by subcutaneous injection of the same radiopaque medium in the dorsal surface of the rear paws (1,2). This dog exhibited increased size of the femoral and saphenous arteries and an increased number, size, and tortuosity of the smaller collateral vessels in the edematous limb compared to the control limb (Fig. 2). The lymphangiograms showed a lack of contrast medium movement from the edematous, parasite-infected limb, while the right control limb displayed a typical

pattern of contrast medium movement in the lymphatic vessels and popliteal lymph node for a normal canine limb (Fig. 3).

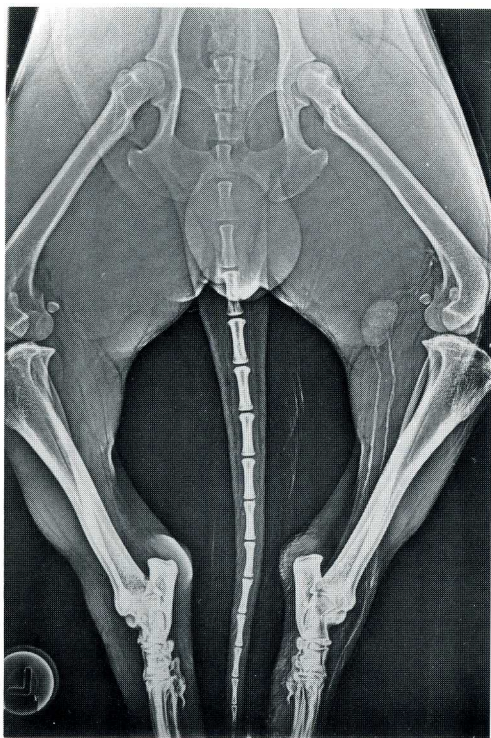


Fig. 3: Lymphangiogram of the same dog (see Fig. 2) demonstrating little contrast medium flow in the edematous limb (left) and a typical normal lymphatic pattern in the control limb (right).

COMMENT

Research on vascular changes in lymphedematous limbs using dilution techniques and by measuring arteriovenous blood O_2 differences has indicated increased

total limb blood flow in these edematous limbs (3-5). Recent studies using radioactive isotope techniques have described vascular perfusion changes at the capillary level (3). We found that xeroradiographic arteriography provided a quick method for visualizing the gross vascular pattern in limbs, and that this technique provided further information concerning vascular changes in limb edema. Direct visualization of the edematous limb vascular pattern demonstrating dilation and proliferation of peripheral arteries conforms with other findings of increased total limb blood flow in lymphedematous limbs.

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