

LYMPHOGRAPHIA**INTRAMURAL PERIVENOUS LYMPHATICS****R.C. Mayall, A.C.D.G. Mayall**

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Fig. 1. Middle-aged woman with severe post-mastectomy lymphedema with complete lymphatic blockade in the axilla in conjunction with 75% external compression of the ipsilateral axillary vein. Twenty-four hours after injection of 5 ml lipiodol into a dorsal lymphatic at the wrist, an extensive perivenous intramural lymphatic network around and within the wall of the adjacent cephalic vein (arrow) is seen.

COMMENT

Whereas collateral lymphatic-venous communications are well documented, they fail to function without increased intralymphatic pressure or volume (1). After injection of contrast media into the dorsal subcutaneous tissues of the rabbit ear, Collette (2) demonstrated opacification of periarterial and perivenous lymphatics consistently, and noted further "one frequently finds the distally injected oily compound, in cases with lymphatic block, as linear opacifications, the distribution of which corresponds to the course of the arteries and veins." This phenomenon probably represents contrast reflux into small lymphatic pathways of the blood vessel walls and subsequent migration into the extra-lymphatic interstitium within "prelymphatic" spaces of nearby arteries and veins.

Embryologically, the primary lymphatic sacs bud from small veins. Whereas normally there are no notable communications between lymphatics and the blood vascular system other than into cervical veins (3), when lymphatic obstruction develops (e.g., tumor dissemination), numerous lymphatic-venous anastomoses "open up" (1). Moreover, in conjunction with partial venous obstruction and stagnation, opacification of these lymphatic-venous communications is accentuated as the contrast media accumulates in the venous wall and even on occasion within the vein lumen (4,5).

Battezati and Donini (6) have observed similar changes in the legs in some patients with acute and chronic inflammation. The ghost-like outline of nearby small veins has also been described by Browse, but only when the lymphangiogram needle has been factitiously inserted into the wall of a small venule rather than a lymphatic (7). As seen in our patient, however, (see Fig. 1) this finding occurs with accurate lymphatic needle cannulation in conjunction with concomitant blockage of lymphatic and venous drainage and represents true intramural perivenous lymphatics.

If an operative lymphatic-venous shunt is planned for the management of severe lymphedema, the presence of a perivenous cuff of lymphatics on conventional lymphography signifies both restricted lymphatic and venous flow and requires improved venous drainage (as with fibrolysis of the tissue around the axillary vein following modified radical mastectomy) in addition to an operative lymphatic-venous anastomosis.

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