

New Microsurgical Technique of Lymphatico-venous Anastomosis for the Treatment of Lymphedema

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We have worked out a new technique of lymphatico-venous anastomosis for treatment of lymphedema. Below are the details of this technique.

In order to make an opening in the vein and to introduce the lymphatic vessel we are using needles of two different types: a straight one (Fig. 1A) and an angled one. They have a diameter of 12, 15 or 18 mm, and a length of 140 mm. These needles are provided with a groove of a length of 30 mm.

The operation begins with staining the superficial lymphatic vessels by injecting 2-3 ml of 11% PBV dye into the interdigital spaces of the foot. After staining the vessels we make a slightly curved cutaneous incision, starting a little below the inguinal fold so as to obtain a good approach to the superficial lymphatic

vessels and to the great saphenous vein (Fig. 1B). We use a Beckmann's type self-retractor. The lymphatic vessels must be dissected carefully mostly by blunt dissection with scissors (Fig. 1C). Each isolated lymphatic vessel (from 3-9 in number) is held by a traction loop of no. 1 or 2 black silk. After a complete dissection of lymphatic vessels we start the dissection of the great saphenous vein (Fig. 1D). A segment of the vein at adequate level is held by two traction loops of umbilical tape. As the next step of the operation the lymphatic vessel is divided; its proximal stump is ligated with fine silk thread (Fig. 1E). A straight or angled grooved venous needle with adequate diameter, according to the surgeons choice, is inserted at an appropriate level into the great saphenous vein, and held by the assistant who

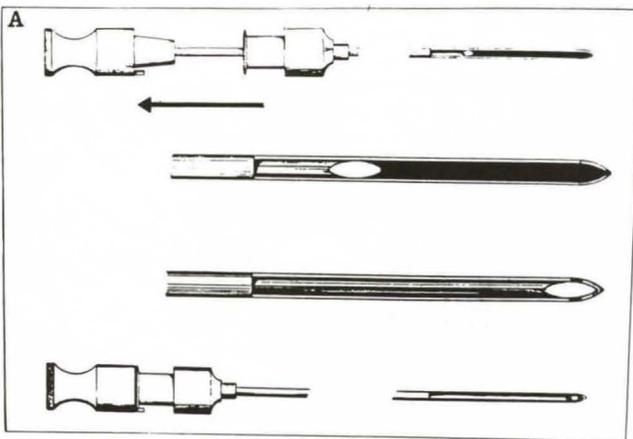


Fig. 1A

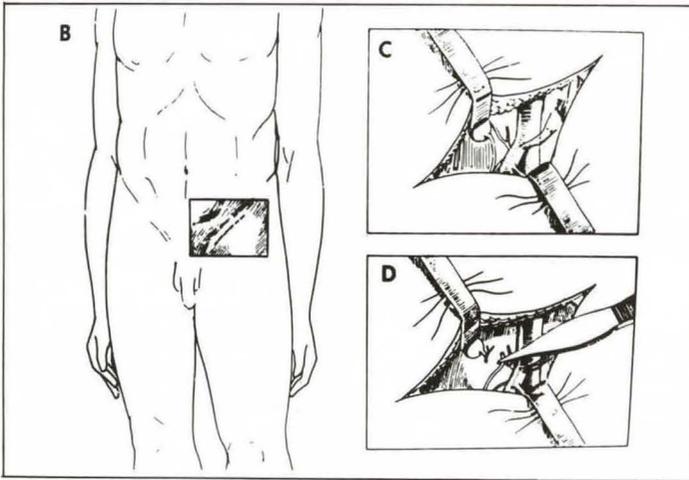


Fig. 1B-D

rotates it the groove down to avoid bleeding (Fig. 1F). The distal lymphatic stump to be anastomosed is exposed. A 7-0 double arterial curved needle with prolene suture is used to perform the anastomosis. One of the two needles is passed from outside through the lymphatic wall and coming out through the lumen (Fig. 1G). The same needle is then inserted in the vein orifice through the grooved venous needle from inside to outside of the wall and coming out at a distance of 2 mm from the orifice (Fig. 1H). The same maneuver is repeated with the other needle at a distance of 1 mm from the other.

The lymphatic vessel is pulled cautiously into the vein (Fig. 1I). The stitch is tied loosely in order to avoid a stricture at the outlet (Fig. 1J).

There is no need for supplementary sutures, because the elasticity of the vein wall permits sealing off the site of anastomosis. When bleeding occurs it is minimal and a slight pressure with the glove for several minutes is sufficient to stop the leakage. After completion of the first anastomosis other lymphatics are implanted. The more blocked lymphatic vessels are anastomosed to the vein, the greater

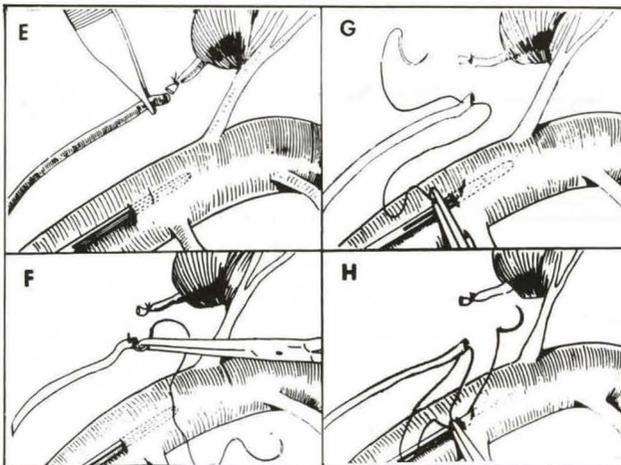


Fig. 1E-H

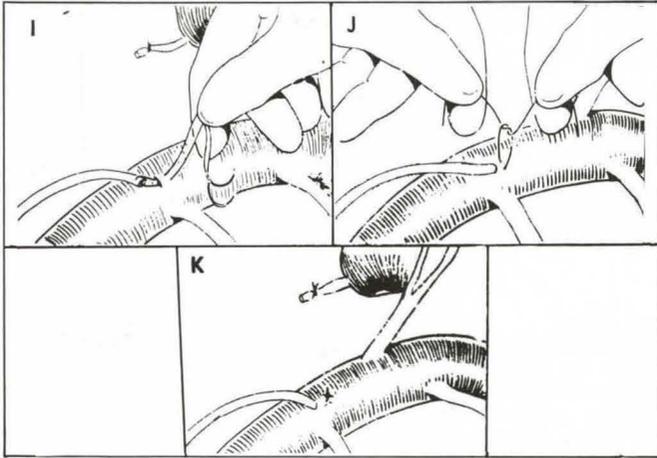


Fig. 1 I-K

will be the reduction of edema. In three of our cases we were able to anastomose 9 lymphatic vessels; 5 to the great saphenous vein, and the others to the lateral or medial acces-

sory saphenous veins. In another patient we performed anastomoses at the knee level and twelve in the inguinal region.

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