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Studies on Human Peripheral Lymph
III. Leg Lymphography and Subsequent Cannulation on the Lymph Vessel

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Cannulation of peripheral lymphatics in man offers possibilities of a wide range of studies of the human tissue fluid under various conditions. Studies of the cell content of peripheral lymph have provided new information about the lymphocyte kinetics in lymphomas (3, 4). The distribution of drugs (1), immunoglobulins and complement (5) between blood and lymph has yielded valuable data.

The method used for cannulation has been described previously (2). Recently the method has been modified. Lymph cannulation is now performed in direct connection with lymphography without extra surgical intervention for cannulation. This allows us to collect lymph for some days in a large group of patients. It is assumed that this modification might be of interest to other centers where lymphography is performed.

Method

After injection of Patent Blue Violet as for foot lymphography the lymph vessel is exposed on the lower part of the leg instead of the dorsum of the foot. Usually the lymph vessel is visible lateral to the tibia about 15 cm above the ankle. The vessel is exposed through a 2-3 cm longitudinal incision at this point and cannulated cranially in the wound. After injection of the contrast medium the needle is left in the vessel until the patient has been X-rayed. The needle is then carefully removed. A gentle traction is made on the silk loop which underbinds the vessel and the polyethylene tube is inserted distally into the vessel and fastened with a catgut ligature. The tube has been drawn out to a thin tip, siliconized and filled with heparinized saline as previously described (2). In some cases it is necessary to enlarge the opening in the vessel, using a small iris scissors. If it is not possible to insert the tube into the opening used for lymphography, the vessel is ligated and a new opening made at a more distal point. The tube is taped to the skin, above the wound, and inserted into a glass vial with heparin. The wound is then closed and lymph sampled as previously described (2).

Comment

Thirty patients with various malignancies, mostly lymphomas and testicular tumors, were cannulated in this manner, usually on one leg only. In 2 patients cannulation was unsuccessful. Except for one woman, only men were cannulated on the leg for cosmetic reasons.

There was considerable variation from patient to patient concerning duration of lymph collection, lymph flow and cell number in the lymph, probably related to the disease and patient activity. The cell output was not significantly different from the findings previously reported in comparable patients cannulated independent of lymphography. There are, however, some differences in the lymph flow. In 9 patients with leg lymphography and subsequent cannulation we observed low lymph flow during the first two days. In 3 of them the flow stopped after 1 to 3 days due to coagulation. This is probably because their physical activity was very low during the first two days as all patients had cavography the day after lymphography.

Furthermore, bacteria were found in cytocentrifuge preparations of lymph in many of the patients cannulated in connection with lymphography. Whether the bacteria enter the lymphatic

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from the wound – which has been open for 2-3 hours – or whether the lymph is infected from outside in the vial is at present an open question. One patient developed a small abscess in the wound. Further studies are necessary to answer this question.

Detailed information concerning lymph flow and composition will be published. This brief communication is to point out that during one surgical intervention for lymphography it is possible to cannulate the lymph vessel for sampling of peripheral lymph. The method is very simple and can easily be performed in all centers experienced in lymphography.

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