

LETTER TO THE EDITOR**AXILLARY DISSECTION FOR BREAST CANCER**

In his Commentary on minimizing arm lymphedema after mastectomy [Lymphology 34 (2001)], Clodius reminds us of the importance of surgical technique during axillary dissection and postoperative wound management to limit injury to lymph outflow from the upper extremity. Most agree that the major risk factors for later development of arm lymphedema comprise "rough" surgical technique, the extent of axillary dissection (1), axillary radiotherapy (2), and complications in wound healing including those caused by bacterial infection (3). Even with meticulous operative technique, however, the incidence of arm lymphedema remains high, reaching up to 40% of patients in some series (4,5). Analysis of data from various sources is difficult because of lack of precise descriptions of both type of breast and axillary procedures undertaken. Hence, a wide range of prevalence of post-treatment arm lymphedema exists in the pertinent literature (4,5). Nevertheless, the problem of arm lymphostasis persists, and in this context, I would like to add the following to Clodius' vast experience.

The potential later development of lymph stasis in the upper extremity is probably unavoidable after axillary nodal dissection including sentinel node(s) removal. Thus, surgeons often remove lymph nodes which have not been stained with blue dye or visualized on lymphoscintigraphy if they are enlarged. It is only a matter of time (sometimes years) before the first episode of dermatolymphangioadenitis (DLA) occurs, and lymphedema becomes clinically manifest.

The question remains open, however, which patient will develop overt lymphedema and in whom lymphedema will remain "latent" (6,7). Lymphoscintigraphy by delineating the status of the lymph vascular network after axillary dissection may provide a predictive measure as to the likelihood of subsequent lymphedema.

I prefer not to ligate afferent lymphatics during axillary dissection as it allows easier and faster joining together of the divided stumps by a network of small lymphatics (disrupted plexus of small lymphatics). External drainage of the axillary fossa is effective in preventing formation of a lymphocele. Special attention should also be paid to careful and even use of microsurgical technique in separating lymphatics from the axillary vein. Only 30% of later swollen arms show an entirely unrestricted venous return (8). Scarring around the axillary vein makes its wall stiff and limits distension with decreased arm venous return during breathing. Restricted venous drainage, in turn, leads to increased lymph formation thereby aggravating lymph stasis and arm edema. Antibiotics should be administered perioperatively and for 2-3 weeks after axillary dissection. A wide spectrum antibiotic (e.g., ciprofloxacin) should be given on day 1 through day 3, followed by 2-3 weekly injections of a long-acting penicillin. There is a large body of indirect evidence that under physiological conditions microorganisms are transported from palm skin along lymphatics to the lymph nodes. Indeed, contamination of lymph accumulating in the axillary fossa

after severing of lymphatics may be a normal physiological phenomenon, and a high incidence of DLA after axillary dissection has been described (3). In our unpublished statistics, 54% of 120 patients with postmastectomy lymph stasis (stage II) had episodes of DLA, with an occurrence of 23% per year and an average number of DLA attacks of 2.8 per patient.

Whereas meticulous operative technique may limit damage to the lymph drainage capacity, the unavoidable issues of subsequent regional radiotherapy and skin-originating-microorganism axillary infection developing in tissues with lymph stasis, play a decisive role in the subsequent occurrence of arm lymphedema. Evaluating the extent of lymph stasis in the arm by means of early lymphoscintigraphy may help more than any other measure in predicting the likelihood of later development of arm lymphedema and allow the sound institution of preventive measures to minimize progression of lymph stasis.

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