

EDITORIAL**CONSENSUS AND DOGMA**

For too long the condition of lymphedema, whether congenital or acquired, and related vascular dysplasias have been neglected. Within the past few years, however, because of the remarkable organizational skills of interested healthcare professionals and patient support groups around the world, this nihilistic attitude is undergoing rapid change. The ISL has even developed a "living" Consensus Document intended for periodic revision based on advances in the science and practice of lymphology (see p. 138, this issue). Complex physical therapy (CPT) (sometimes termed "decongestive" or "combined" physical therapy) involving manual manipulation, compression by bandage-wrapping, meticulous skin care, remedial exercises and long-term wearing of a low stretch compression garment has proved to be an effective albeit labor intensive treatment program for managing peripheral lymphedema. CPT now complements and in many clinics has supplanted pneumatic "pump" devices and complicated operations for treatment of this condition. As accompanies any successful enterprise, however, there have also been concerted efforts to develop strict medical practice guidelines and further to codify the do's and don'ts of daily living for patients at risk for lymphedema. Some of these recommendations are sensible for all individuals (e.g., active exercise and weight reduction). Other recommendations, however, have taken on the luster of dogma, often unsubstantiated by scientific inquiry, and these recommendations may confuse patients and produce

unintended psychological and physical repercussions.

Recently we received a thoughtful inquiry from a clinic in the midwestern United States (reflecting several other similar inquiries by doctors, therapists, and patients) regarding management of patients who have undergone treatment of breast cancer (irradiation and/or surgery) and who now present for treatment of a malignancy in the opposite breast or the need for an arm operation on the opposite side. Questions were raised about propriety of the site of intravenous infusions, venipuncture and blood pressure measurement. In brief, what are the risks and potential for aggravating lymphedema by using an already "compromised" arm as the site for these minimally invasive procedures, and are they outweighed by the risks of thrombosis/embolism from venipuncture and IV infusions in the legs? Moreover, what should be the approach if it is unknown whether limited or no axillary lymph node sampling as opposed to radical dissection was done originally? Further, if an IV is started on the arm already at risk for lymphedema, should blood pressures be taken above or below the IV? Is venipuncture in this arm an unreasonable risk? From these questions, it is apparent that these minimally invasive procedures have created considerable anxiety in many women, some of whom have begun wearing bracelets carrying the warning "don't touch this arm" or similar admonitions. Other patients with leg lymphedema are counseled to avoid airplane travel altogether with the implication that reduction of barometric (cabin) pressure to that at

8-10,000 feet above sea level has a drastically adverse effect on limb swelling that cannot be offset by simply wearing a low-stretch compression garment and keeping the limb mobile.

Whereas these are legitimate questions and issues, rigid rules tend to promote exaggerated fears and carry the potential to frustrate concerned physicians trying to manage new problems in these patients. To some extent, it is precisely for this and other related reasons that our group has long advocated that a properly performed lymphangioscintigram (LAS) be obtained soon after completion of radical therapy for cancer (originating in the breast or elsewhere where the peripheral lymphatic circulation is placed at risk) to ascertain the existing structural and functional status of the arm or leg lymphatic vasculature. For example, not uncommonly it will be ascertained by LAS that, despite regional nodal dissection and/or irradiation, lymphatic pathways are still largely intact and accordingly, the risk of subsequent limb lymphedema is low. Conversely, in other individuals, high grade lymphatic blockage is confirmed by LAS even though gross lymphedema has not yet occurred. Clearly, advice addressing many of the questions raised regarding "violations" of a potentially lymphedematous arm in an individual with an intact lymphatic system should be quite different from one with an already seriously compromised lymph circulation.

The delayed development of lymphedema after extirpation of axillary or groin lymph nodes is consistent with current understanding of its experimental reproduction where it typically takes months, years or even decades for limb swelling to become unremitting. This seeming paradox reflects gradual fatigue over time of the contractile elements of lymphatic propulsion (lymphangions) working against iatrogenically induced obstruction. In conjunction with progressive intraluminal valve incompetence, delayed lymphatic failure and refractory edema eventually develop. An analogous disorder is

essential hypertension, where cardiac output remains normal for many years but at the expense of greater work as the heart shifts into a higher power gear to maintain the circulation rate. Without correction of elevated peripheral vascular resistance and arterial pressure (e.g., by drug therapy and/or dietary salt restriction and weight reduction), prolonged overwork by the heart culminates in premature weakening of cardiac muscle contraction with sudden onset of congestive heart failure many years later.

Commonly, when a patient develops secondary peripheral lymphedema s(he) characteristically attributes its occurrence to a recent event such as minor trauma, an insect bite or possibly even a venipuncture. Although these suspect precipitating events may be the "straw that breaks the camel's back," the underlying cause is nonetheless ongoing lymphatic obstruction, which finally, as in premature heart failure with persistent essential hypertension, suddenly presents as overt lymphatic failure. Subclinical limb swelling has been evolving for some time, and the compromised lymphatic circulation suddenly decompensates burdened by the added lymph flow brought on by even a minor physiologic stress.

Common sense dictates, however, that in any extremity disabled for whatever reason, all things being equal, it would be preferable to avoid violating the compromised limb by drawing blood, taking blood pressure measurements, etc., to minimize possible complications such as infection. Where that course of action is not feasible, as when both arms are swollen, only a remote likelihood exists of actually doing serious harm by carefully carrying out such minor maneuvers gently and with sterile precautions. After all, an intravenous infusion or aspiration of blood involves sterile punctures directly into the bloodstream and accordingly subsequent lymphangitis is highly improbable. Chemotherapeutic agents for treatment of malignancy, on the other hand, tend to promote phlebitis, and inadvertent infiltration into the

subcutis can certainly cause extensive soft tissue damage. Accordingly, it would be preferable to administer such potent agents either through a central venous catheter (such as a port-a-cath or a Hickman line) and avoid the already swollen limb altogether. Whereas it is ordinarily undesirable to puncture veins in the legs for blood access, one has, however, to weigh the complete clinical picture. For example, after major trauma, it is often preferable to aspirate blood and start infusions in the femoral vein when that course of action seems the most rapid and prudent way to save a life. By the same token, air travel should not carry undue concerns for patients with lymphedema. Simply wearing a compression garment, judicious in-flight ambulation, stretching exercises, and elevating the legs at destination is probably good advice during or after a lengthy air flight for all persons, including those with leg lymphedema.

Occasionally, it may even become necessary to operate on a lymphedematous arm or a non-edematous arm distal to a previous radical groin or axillary dissection or site of regional nodal irradiation. Again, the treating physician must balance the benefits versus the risk in the decision making process. For example, if a patient has a new growth or nerve entrapment with dysesthesia and pain in a lymphedematous arm, then excision or release is necessary to alleviate symptoms or to obtain tissue for histopathologic examination. Making a vertical incision

to minimize interruption of superficial lymphatics or wearing of a compression garment and limb elevation after the procedure are worthwhile precautions to be considered. Furthermore, if the status of the peripheral lymphatic system has already been ascertained by prior lymphangioscintigraphy, one can make a more rational decision as to the risk of precipitating or exacerbating lymphedema by such treatment.

The practice of medicine is rarely "cut and dry" and typically requires a wise weighing of risks and benefits incorporating a broad psychological, physical, socio-economic and cost perspective in decision making along with a careful consideration of coexistent complicating patient conditions. With peripheral lymphedema, rigid practice parameters and excessive warnings may raise patient fears unduly over such minor events as taking of blood pressure, blood drawing, and air travel and interfere with needed medical/surgical interventions and enjoyable daily activities that could substantially improve the patient's quality of life.

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