Background

Lymphedema with associated arm swelling following surgical and/or radiotherapy for breast cancer is a major complication experienced by breast cancer survivors. It often does depend on a variety of risk-factors and the nature of the primary treatment, with occurrence rates of 10% (2 to over 40%) reported for radical mastectomy combined with radiotherapy(5). About 50% of women who will go on to experience lymphedema complications do so within three years of treatment but new cases develop beyond this at about 1% per year (3).

Summary

The impact of this chronic condition, which tends to grow worse without treatment (4), is multidiimensional and may include loss of self esteem, depression, chronic pain, severe mobility limitations and predisposition to extraskin infection. Therapy, in the form of manual lymph drainage, when used as a part of complete therapy, may help to prevent the condition’s progression and in some cases to reverse significant lymphedema already present.

Methods

Relative tissue water was estimated based on the measured dielectric constant as determined at 300 MHz using the Defin-D Moisture Meter. Four different probes were used (two are illustrated). The larger the diameter of the probe, the greater was the included tissue depth ... depths were 0.5, 1.5, 2.5 and 5.0 mm. Data reported here is for values obtained prior to treatment for the lymphedema.

Results

Highly significant differences in relative tissue water content between lymphedematous (Affected) and normal (Control) arms is clearly shown. The greater RTW of the edematous limbs is seen for all tissue depths evaluated. This finding is fully consistent with the primary hypothesis initially put forward.

Conclusions

These initial findings suggest that this method may serve as a rapid quantitative assessment procedure for documenting lymphedema and possibly for early detection of incipient lymphedema that is not yet clinically observable.

References