

Long-term follow up of the impact of dragon boat racing on lymphedema in breast cancer survivors: the Florence Dragon Lady experience

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Upper limb lymphedema, due to lymphatic drainage interruption because of axillary lymph node dissection and/or radiation, is a dreaded chronic complication in breast cancer survivors. Upper limb swelling can cause pain, discomfort, heaviness and decreased movement thereby affecting the quality of life. Numerous lifestyle factors have been implicated in the development of lymphedema, and guidelines for the prevention of this complication have been developed. There were previous concerns in the medical community that vigorous upper-body exercise could lead to the development or worsening of lymphedema. However, the practice of dragon boat racing by breast cancer survivors has challenged the traditional advice about limiting upper extremity activity to prevent lymphedema. Dragon boat is a discipline of ancient Chinese origin, practiced in boats of standardized dimensions by crews of 20 athletes who paddle to the beat of a drum. Paddlers sit in twos side-by-side and use a single-bladed paddle. A team also has a steerer holding the direction. Currently, there are more than 140 breast cancer survivors' dragon boat teams worldwide with well-documented physical, psychological, and social improvements. Here, we assessed the longitudinal effects of dragon boat practice on lymphedema in breast cancer survivors from the Florence Dragon Lady team. This team, formed in February 2006, has 60 athletes training for 1 hour/day twice a week at the Canottieri Comunali on the Arno River and regularly participating in dragon boat racing. The difference between affected and unaffected limb circumference was assessed overtime from 2006 to present at the Oncology Rehabilitation Center by multiple measurements at several anatomical points. Our findings showed that in the majority of breast cancer survivors the difference between limbs remained stable or improved. Only five participants were found to have an onset of mild lymphedema with an increase in circumference difference of about 0.5 cm at one measurement point (i.e. axilla), while a participant who had undergone a mastectomy due to disease recurrence reported moderate lymphedema. In conclusion, these findings contribute to a growing body of literature supporting the value of dragon boat racing as a viable physical activity intervention to enhance physical outcomes on upper limb in breast cancer survivors.

Key words

Breast cancer survivors, dragon boat, upper limb disability, lymphedema.