

# Arm Swelling and Psychological Well-being among Long-term Breast Cancer Survivors

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# Background on Breast Cancer

- Most common malignancy among women
- Early detection and treatments have increased number of survivors
- 2.3 million breast cancer survivors<sup>1</sup> and increasing
- Focus is now quality of life and survivorship

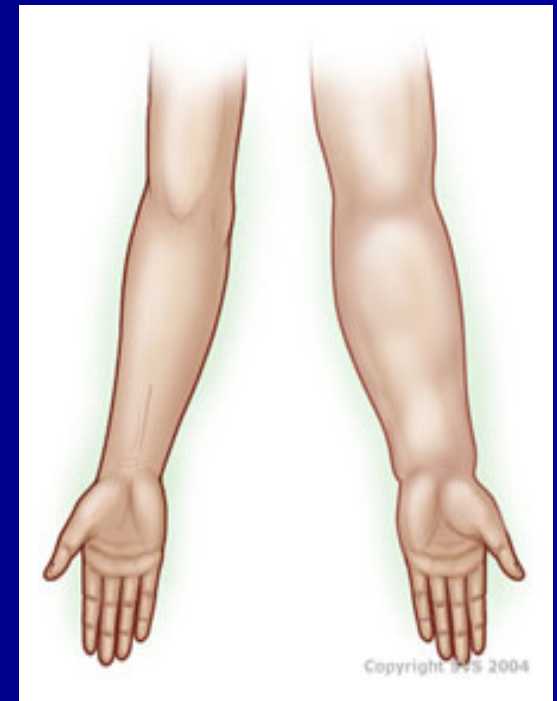
<sup>1</sup> ACS, Breast Cancer Facts and Figures, 2005-2006.

# Common Problems for Breast Cancer Survivors

- Menopausal symptoms
- Fatigue
- Depression
- Fear of recurrence
- Body image issues
- Sexual dysfunction
- Sleep disturbance
- Osteoporosis
- Lymphedema

# Lymphedema

- Side effect of treatment due to disruption of lymph flow
- Distinguished by swelling and/or pain in affected limb
- Accurate estimates of incidence, prevalence, duration of swelling are not known
- Effects on survivors' psychosocial well-being and quality of life are not widely reported
- No prevention strategies have been proven effective



# Lymphedema (cont.)

- Overall incidence of arm lymphedema ranges from 6% to 56% two years following surgery
  - Depending on the extent of axillary surgery and the use of radiotherapy<sup>1</sup>.
- Most women with lymphedema develop it within the first 12-14 months following treatment<sup>2</sup>.

<sup>1</sup>e.g., Petrek JA & Heelan HC. *Cancer* 1998;83 (Suppl 12 American): 1776-1781; Swedborg I & Walgren A. *Cancer* 1981;47:877-881; Kissin MW et al. *Br J Surg* 1986;73:580-584; Gerber et al. *Breast Cancer Res Treat* 1992;21:139-145.

<sup>2</sup>e.g., Werner RS et al. *Radiology* 1991;180:177-184; Guedes Neto HI. *Lymphology* 1997;30:35-36.

# Purpose

- Describe the characteristics of arm and hand swelling; and
  - Describe the effects of swelling on psychological well-being and health-related quality of life
- among a population of long-term breast cancer survivors.

# Study Population

- 331 eligible survivors of CALGB 8541 (a clinical trial coordinated by CALGB from 1985 - 1991)
  - Alive
  - Disease-free
- 9 to 16 years post-treatment

# Methods

- Mail survey focused on demographics, arm/hand swelling, health-related quality of life and psychological well-being.
  - Depression (CES-D)
  - Breast cancer anxiety (Breast Cancer Anxiety and Screening Behavior Scale)
  - Body satisfaction (Self-concept Scale)
  - Physical functioning (SF-36 Physical Component)
  - Mental functioning (SF-36 Mental Component)



# Statistical Methods

- Patient registration and data collection were managed by the CALGB Statistical Center.
- Data analysis consisted of descriptive statistics (frequencies, mean/SD) and ANOVA.
  - Non-parametric methods (Kruskal-Wallis and Wilcoxon tests) were used to verify parametric results.
- Response rate = 78%

# Demographic Characteristics (N = 245)

- Mean age = 62.5 years (range 35 to 85 years)
- Mostly White (94%) and married/partnered (67%)
- 53% had a high school education or less
- 45% were employed at least part-time; 35% were retired
- 34% had annual household income < \$30,000; 35% had  $\geq$  \$60,000

# Clinical Characteristics (N = 245)

- Average time since diagnosis = 12.5 years
- Number of nodes removed
  - $\leq 10$  nodes = 16%
  - 11 – 20 nodes = 53%
  - $\geq 21$  nodes = 30%
- Number of positive nodes
  - 1 – 4 nodes = 82%
  - 5 – 9 nodes = 13%
  - $\geq 10$  nodes = 5%
- Experienced swelling since surgery = 30.6%
  - N = 75

# Swelling Characteristics (N = 75)

<u>Characteristic</u>	<u>%</u>
<b>Onset</b>	
< 2 years after surgery	55
2 to < 5 years after surgery	13
≥ 5 years after surgery	12
<b>Frequency: Constantly</b>	49
<b>Location</b>	
Upper arm	49
Entire arm and hand	21

# Swelling Characteristics (cont.)

<u>Characteristic</u>	<u>%</u>
<b>Severity</b>	
Mild	51
Moderate	37
Severe	9
<b>Perceived cause (&gt; 1 answer)</b>	
Removal of axillary lymph nodes	73
General arm use	23
Infection/injury to arm/hand	17
Weather changes	12

# Swelling Characteristics (cont.)

<u>Characteristic</u>	<u>%</u>
Interference with daily activities	69
Source of interference	
Clothing	36
Appearance	32
Routine activities	16
Current swelling	76
Sought treatment for swelling	37

# Relationship between Psychological Well-being, HRQL & Swelling

- No significant relationships were found between swelling and the following:
  - Depression
  - Breast cancer anxiety
  - Body satisfaction
  - Physical functioning
  - Mental functioning

# Relationship between Psychological Well-being, HRQL & Swelling

- Relationships between swelling characteristics, psychological well-being and HRQL were explored further, specifically with regards to:
  - Onset
  - Frequency
  - Severity
  - Activity interference
  - Treatment seeking



# Relationship between Psychological Well-being, HRQL & Swelling

Characteristic	Depression <sup>a</sup>			Physical Functioning <sup>b</sup>			Mental Functioning <sup>b</sup>		
	N	Mean	P	N	Mean	P	N	Mean	P
Severity			.09 <sup>c</sup> .11 <sup>d</sup>			.003			.09 <sup>c</sup> .11 <sup>d</sup>
Mild	38	8.7		38	84.3		38	80.1	
Moderate	27	9.5		28	75.9		28	73.9	
Severe	7	16.7		7	48.6		7	66.9	
Interference			NS			.01			NS
No				22	88.1				
Yes				53	73.2				

<sup>a</sup> Range from 0 – 60, with higher scores indicating more severe depressive symptoms; <sup>b</sup> Range from 0 to 100, with lower scores indicating poorer quality of life; <sup>c</sup> p-value resulting from ANOVA F-test; <sup>d</sup> p-value resulting from Kruskal-Wallis test

# Discussion

- Rate of lymphedema in long-term survivors (~30%) in this study is similar to other studies.
- Lymphedema is a chronic condition, with 15% of all survivors reporting constant swelling at 12.4 years (avg. time since diagnosis).
- Lymphedema interferes with activities of daily living.

# Discussion (cont.)

- Many attributed cause of swelling to breast cancer surgery; however, 25% believed swelling resulted from general arm use.
- Only one-third of women with swelling sought treatment.
- No relationship between swelling, HRQL and psychological well-being.
- May be associations between severity, depression and mental functioning, as well as interference and physical functioning.

# Limitations

- Self-report
- Missing data
- Mostly White
- Small sample size

# Strengths

- Useful data on swelling characteristics that is lacking in the literature, particularly among long-term breast cancer survivors

# Conclusions

- Lymphedema is a chronic problem for long-term breast cancer survivors.
- Lymphedema prevention education for breast cancer patients is needed.
- Physician education is needed regarding importance of patient education, early detection and early intervention.
- Patient-provider communication skills training is also needed.