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Shoulder function in breast cancer survivors with subacromial impingement

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Background

Shoulder co-morbidities are common after breast cancer treatment, with recent studies showing a high prevalence of subacromial impingement (SI). However, the functional implications of SI remain uninvestigated.

Methods

We examined 13 breast cancer survivors with SI (SI+ group; age 57.8 ± 7.3 years, height 161.6 ± 7.2 cm, body mass 78.6 ± 12.6 kg) eleven breast cancer survivors without SI (SI- group; age 58.8 ± 6.8 , height 164.7 ± 6.3 , body mass 77.0 ± 12.9 kg) and twelve cancer-free control women (age 57.8 ± 9.5 years, 162.6 ± 6.5 , body mass 59.7 ± 11.1 kg). All survivors received breast conserving surgery and radiotherapy 12-60 months prior. Active shoulder abduction, flexion and extension range of motion (RoM) was measured using an inertial measurement unit (Opal, APDM Inc.) on the upper arm of the treated side in the breast cancer survivors and a randomly chosen side for controls. All participants completed the short version of the disability of arm, shoulder and hand (QuickDASH) questionnaire. Group differences were tested with linear mixed-effects models RoMs and QuickDASH scores as outcome variables, respectively, group as between-subjects factor and participant defined as random intercept.

Results

Abduction and flexion RoM were significantly reduced in the SI+ group compared to controls (both $p \leq 0.012$). No RoM differences were found between the two breast cancer groups or between the SI- group and controls. The SI+ group reported significantly worse QuickDASH scores than controls ($p=0.022$) and trended towards worse QuickDASH scores than the SI- group ($p=0.053$).

Conclusions

SI is common after breast cancer treatment and significantly impacts shoulder function. Affected survivors show reduced abduction and flexion RoM compared to cancer-free women, which is reflected in lower self-reported shoulder function scores (QuickDASH). These findings highlight the need for targeted rehabilitation strategies to address this specific post-treatment shoulder disorder.

Keywords

Breast cancer, subacromial impingement, shoulder, survivorship

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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