

Samantha Karlla Lopes de Almeida Rizzi, Cinira Assad Simão Haddad, Afonso Celso Pinto Nazário, Simone Elias, Gil Facina

Universidade Federal de São Paulo

INTRODUCTION

Early exercises after breast cancer surgery are important for preventing motor and functional complications. However, there are no prospective studies with exercise protocols specifically for patients undergoing breast oncoplastic surgery.

OBJECTIVES

The objective of this study was to evaluate range of motion, pain, and upper limb function, and the incidence of dehiscence, seroma, infection and necrosis, in women following conservative breast cancer surgery with mammoplasty who underwent postoperative exercise protocol with limited shoulder joint amplitude during 15 or 30 days.

METHODS

Sixty women with breast cancer who underwent conservative oncoplastic cancer surgery (mammoplasty without implant) were included in a Randomized Clinical Trial, which was registered in the Clinical Trials registry on June 25, 2015 under number NCT02480842. They were evaluated preoperatively and 07, 15, 30, 60 and 90 days after surgery. The day after surgery, all patients started exercise protocol limited to 90 degrees, directed by the physiotherapist to be performed at home. Two weeks after surgery, they were randomized into two groups: Free Amplitude Group (30 patients) - release of shoulder joint amplitude at pain limit or even feeling the removal of surgical edges; Limited Range Group (30 patients) - maintenance of shoulder movement restriction at 90° until 30 days after surgery, at which time they were also released to free range exercises.

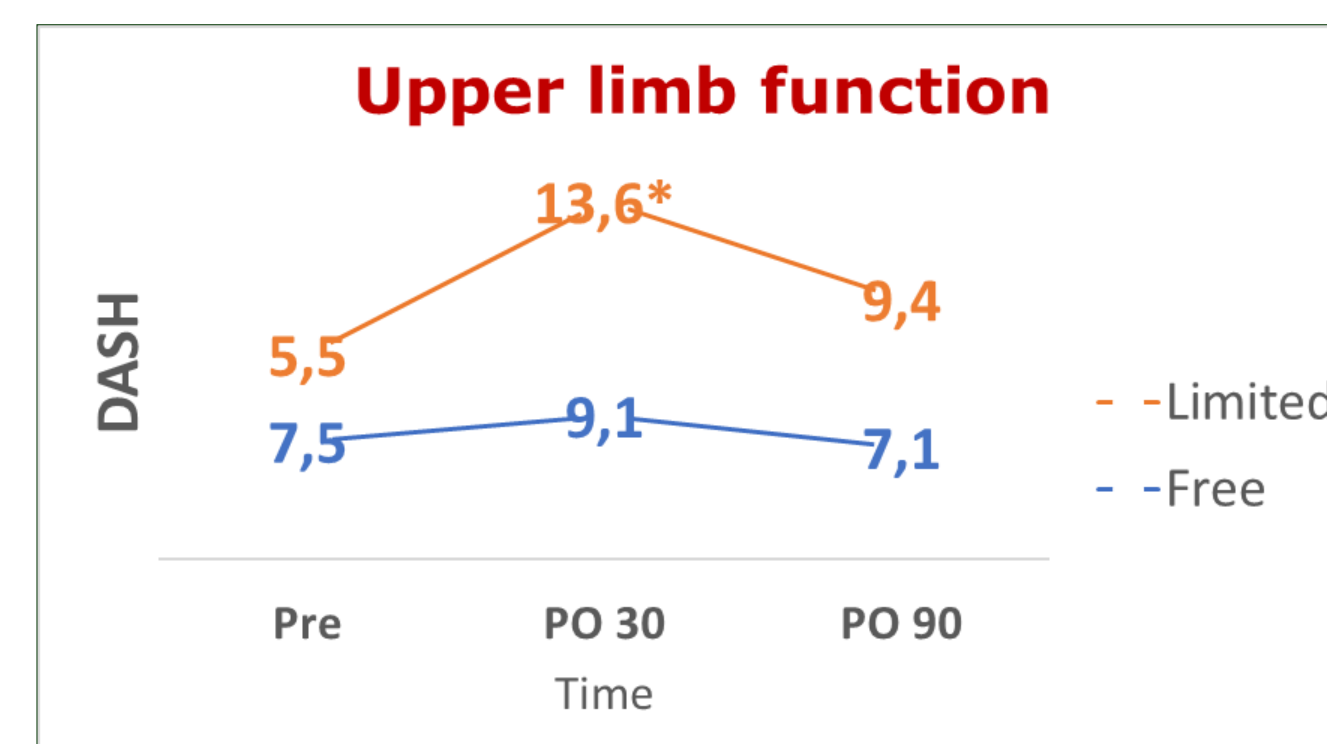
The active range of motion of flexion, extension, adduction, abduction, internal rotation and external rotation of the shoulder homolateral to oncologic surgery was evaluated with a goniometer.

Pain was assessed by the Analog Verbal Scale from zero to 10 (zero means no pain and 10 the worst possible pain). Upper limb motor function was assessed by the DASH (Disabilities of the Arm, Shoulder and Hand) questionnaire. The score ranges from zero to 100 and is directly proportional to arm or shoulder dysfunction (the higher the score, the worse the function). Dehiscence, seroma, infection and necrosis were evaluated by inspection and / or palpation. They were described as “present” or “absent” in each evaluation, with a definition of incidence when the complication occurred at least one of the postoperative moments.

RESULTS

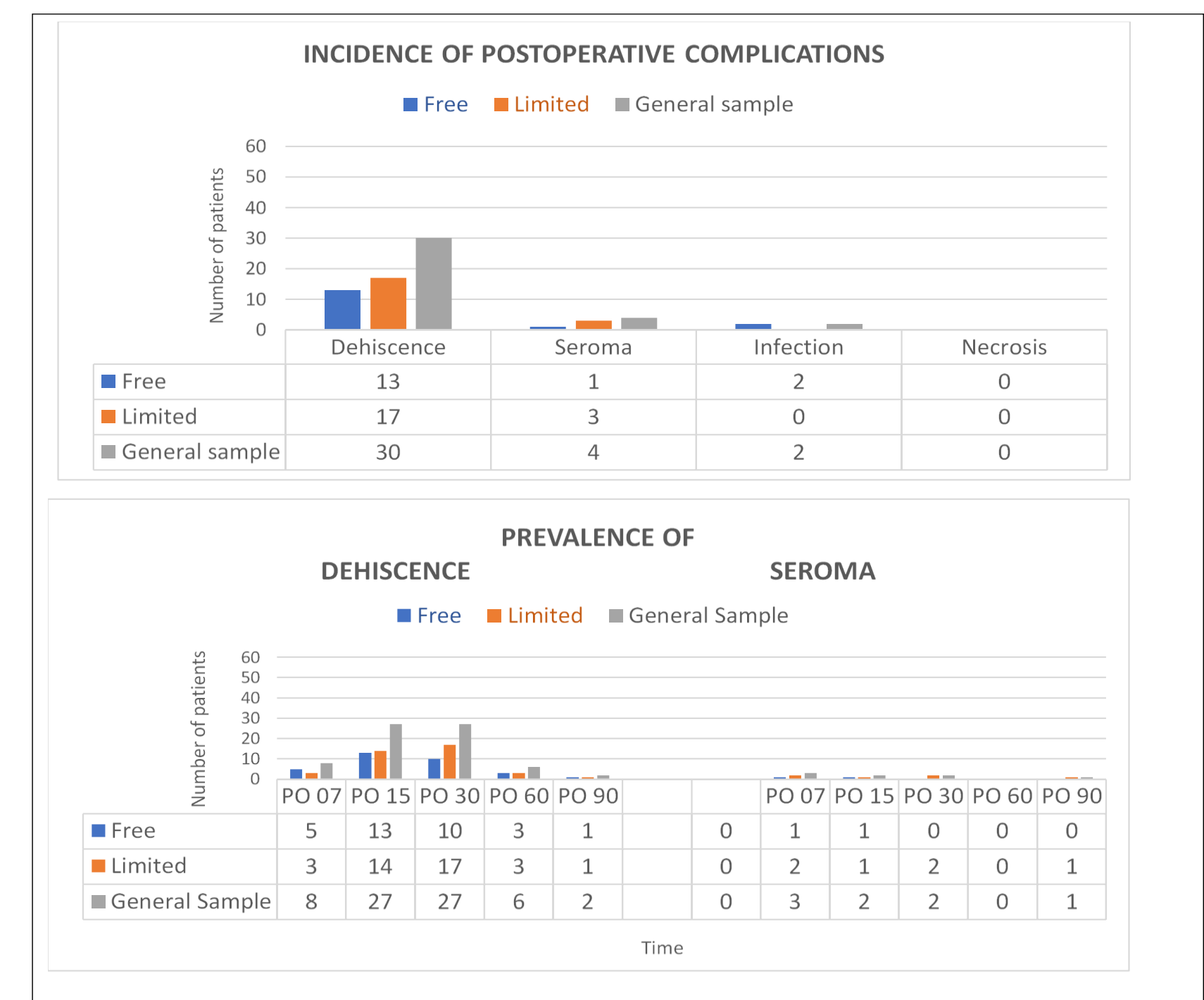
There was no difference between the groups in shoulder joint amplitude, pain and upper limb function. In the intragroup analysis, only the Amplitude Limited Group had a worse upper limb function score than the preoperative period, according to Figure 1. No difference between groups in the incidence of postoperative scar complications was found (Figure 2).

Figure 1. Range of motion, pain, and upper limbs function



Legend: Pre - Preoperative period, PO 30 - 30 days after surgery, PO 90 - 90 days after surgery, DASH - Disabilities of the Arm, Shoulder and Hand Questionnaire. Repeated Measures ANOVA Test: $p < 0.001$ for differences over time; $p = 0.022$ for differences between groups; * for intragroup differences from preoperative values.

Figure 2. Incidence and prevalence of postoperative complications



Legend: Chi-square test for dehiscence incidence and two-tailed Fisher test for seroma incidence and infection (P -value > 0.05 in all analyzes). Note: Frequencies presented by number of patients according to complication.

CONCLUSIONS

The free-range exercise protocol after 15 days of surgery had no impact on patients' range of motion and pain, with a beneficial effect only on intragroup analysis of upper limb function and was safe in relation to cicatricial complications.

Key words: breast neoplasms, mammoplasty, exercise therapy, surgical wound dehiscence, articular range of motion

E-mail: samantha.rizzi@unifesp.br