Use of Compression Bandage in the Immediate Postoperative Period is Not Associated with Post-Mastectomy Acute Pain

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O Uso da Bandagem Compressiva no Pós-Operatório Imediato Não Está Associado à Dor Aguda Pós-Mastectomia

El Uso de Vendaje Compresivo en el Postoperatorio Inmediato No se Asocia con Dolor Agudo tras Mastectomía

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ABSTRACT

Introduction: Kinesiological bandage is a low-cost, simple and easy-to-apply non-pharmacological treatment that aims to reduce pain, local edema and improvement of muscle activity. **Objective:** To evaluate the association between the use of compressive bandage in the occurrence of postoperative pain in women undergoing mastectomy at Cancer Hospital III of the National Cancer Institute (HC III/INCA). **Method:** One hundred and six women who underwent mastectomy between March and November 2021 participated of this randomized clinical trial. The patients were randomly assigned to a routine care group at the institution and an intervention group, in which the application of a compressive bandage in the breast plastron in the first postoperative day (D1) was added to the routine care. Pain, paresthesia, range of motion and axillary web syndrome were evaluated on the D1, the first week (D7) and the first month (D30) after surgery. **Results:** The two groups were similar with respect to demographic and clinical data. There was no significant difference in the presence of local pain (at D7 and D30) in 24.1% and 27.8% for the compressive bandage group (p=0.102) and 11.8% and 17.6% for the control group (p=0.217). There were no other statistically significant differences for any outcome assessed. **Conclusion:** The use of compressive bandage in the immediate postoperative period was not associated with pain and other complications in the 7th and 30th days after mastectomies.

Key words: pain, postoperative; mastectomy; athletic tape.

RESUMO

Introdução: A bandagem cinesiológica é um tratamento não farmacológico de baixo custo, simples e de fácil aplicação, que tem como função atuar na redução da dor, no edema local e na melhora da atividade muscular. **Objetivo:** Avaliar a associação entre o uso da bandagem compressiva na ocorrência de dor pós-operatória em mulheres submetidas à mastectomia no Hospital do Câncer III do Instituto Nacional de Câncer (HC III/INCA). **Método:** Ensaio clínico randomizado com 106 mulheres submetidas à mastectomia entre março e novembro de 2021. As pacientes, após sorteio, foram designadas para um grupo controle de cuidados de rotina da instituição e para um grupo intervenção, em que foi acrescida, aos cuidados de rotina, a aplicação da bandagem compressiva na região do plastrão no primeiro dia (D1) do pós-operatório. Foram avaliadas dor, parestesia, amplitude de movimento e síndrome da rede axilar no D1, na primeira semana (D7) e no primeiro mês (D30) após a cirurgia. **Resultados:** Os dois grupos foram similares com relação aos dados demográficos e clínicos. Não houve diferença significativa na presença de dor no local da aplicação (nas avaliações D7 e D30) sendo 24,1% e 27,8% para o grupo da bandagem compressiva (p=0,102) e 11,8% e 17,6% para o grupo controle (p=0,217). Não houve diferença estatisticamente significativa para qualquer desfecho avaliado. **Conclusão:** O uso da bandagem compressiva no pós-operatório imediato não esteve associado à dor e a outras complicações nas avaliações de sete e 30 dias de pós-operatório de mastectomias.

Palavras-chave: dor pós-operatória; mastectomia; fita atlética.

RESUMEN

Introducción: El vendaje kinesiológico es un tratamiento no farmacológico de bajo costo, sencillo y fácil de aplicar, cuya función es disminuir el dolor, el edema local y mejorar la actividad muscular. **Objetivo:** Evaluar la asociación entre el uso de vendaje compresivo y la aparición de dolor posoperatorio en mujeres sometidas a mastectomía en el Hospital del Cáncer III del Instituto Nacional del Cáncer (HC III/INCA). **Método:** Ciento seis mujeres sometidas a mastectomía entre marzo y noviembre de 2021 participaron en este ensayo clínico aleatorizado. Los pacientes fueron asignados aleatoriamente a un grupo de atención de rutina en la institución y a un grupo de intervención, en los que se agregó a la atención de rutina la aplicación de un vendaje compresivo en la región del plastrón en el primer día (D1) del postoperatorio. El dolor, las parestesias, el rango de movimiento y el síndrome de red axilar se evaluaron el D1, la primera semana (D7) y el primer mes (D30) después de la cirugía. **Resultados:** Los dos grupos fueron similares con respecto a los datos demográficos y clínicos. No hubo diferencia significativa en la presencia de dolor en el sitio de aplicación (en las evaluaciones D7 y D30) con 24,1% y 27,8% para el grupo de vendaje compresivo (p=0,102) y 11,8% y 17,6% para el grupo control (p=0,217). No hubo diferencias estadísticamente significativas para ninguno de los resultados evaluados. **Conclusión:** El uso de vendaje compresivo en el posoperatorio inmediato, no se asoció con dolor y otras complicaciones en las evaluaciones de 7 y 30 días después de mastectomías.

Palabras clave: dolor postoperatorio; mastectomía; cinta atlética.

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INTRODUCTION

Breast cancer therapy consists in various combinations of treatment as surgery, radiotherapy, chemotherapy, hormone therapy, and target-therapy[1]. Today, the advances of these treatments and early diagnosis have improved survival curves, which eventually sheds light on the quality-of-life of the survivors[2,3]. Post-mastectomy pain have caused adverse impacts on quality-of-life, physical functioning and psychosocial suffering reported in the literature[4]. A recent systematic review addressing the prevalence of pain in different breast cancer treatments showed that the overall rate of prevalence was greater post-surgery (29.8%) compared to other treatments (21.8%)[1].

According to the International Association for the Study of Pain[5], pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage[5]. Surgical incision, tissue lesion, physiopathological responses, local inflammatory processes and intraoperative nerve lesions can contribute to the type, severity and chronicity of post-operative pain[6]. The intercostobrachial nerve, due to its proximity to axillary lymph nodes is reported as an important cause of pain post-surgical breast cancer treatment[7-9]. It originates from the lateral cutaneous branch of the second intercostal nerve and innervates areas of the axilla, lateral chest and medial arm[7]. Its injury is associated with pain and sensory loss either at the medial arm, axilla and/or lateral chest[9].

Kinesiologic bandage was developed in 1973 by the Japanese doctor Kenzo Kase as a complementary therapy of the rehabilitation process initially targeted to musculoskeletal lesions. It is a simple, easy-to-apply low-cost non-pharmacological treatment which is gaining space in clinical practice in reducing pain and local swelling and improvement of muscle activity[10]. It is believed that the mechanism involved in pain relief is the proprioceptive stimulation of the mechanoreceptors and modulation of pain by inhibiting the nociceptive transmission to the central nervous system[10,11].

A meta-analysis investigated the influence of kinesiologic taping on musculoskeletal pain and revealed significant difference in pain improvement compared with the intervention group (minor interventions) with sham tape and usual care[12]. Some studies have reported that bandage improves postoperative edema and pain of maxillofacial, knee orthopedic and sternotomy surgeries[13-15], but discrepant results are still reported in the literature[16-20]. No oncology-related articles on oncologic pain or postoperative were found, most of the studies with the same method are lymphedema-targeted for this population with significant results for this outcome[21-23].

The objective of the present study is to evaluate the association of the utilization of kinesiologic taping on postoperative acute pain in mastectomized women at the National Cancer Institute (INCA)'s *Hospital do Câncer III (HC III)*.

METHOD

Randomized clinical trial part of a larger study titled "Efficacy of Kinesiologic Taping to Prevent Post-Treatment Seroma Secondary to Breast Cancer Surgery", with 18-years or older women submitted to mastectomy to treat breast cancer at HC III/INCA from March to November 2021. The exclusion criteria were: simultaneous bilateral mastectomy, patient with postoperative infected wound or bruise at the moment of the study enrollment, report of autoimmune diseases causing skin lesions and/or allergy to taping and patients with difficulties of understanding.

The Institutional Review Board of INCA (CAEE (submission for ethical review): 86162317.9.0000.5274) approved the study, registered at ClinicalTrials.gov Identifier: NCT04471142. Eligible patients were invited to join the study at the first postoperative day and after being briefed, accepted to participate and signed the Informed Consent Form (ICF); they were randomized to control group with usual routine care at the institution or to the intervention group with application of taping further to routine care. Eleven blocks with ten envelopes each were available: five envelopes had a code to assign the patients to the intervention group and five to the control group. Randomization occurred by simple chance.

The sociodemographic characteristics of both groups were collected through an interview for study enrollment. The intervention group completed a daily questionnaire at home during the period the bandage was applied with information about symptoms at the site where it was applied (pain, itching, burning, discomfort) and satisfaction with the intervention. Data on oncologic treatment, histopathological studies, clinical and surgical data were extracted from hospital charts.

The study's primary outcome was pain at the local where the tape was applied. Secondary outcomes were pain at the ipsilateral arm, sensorial change at the innervation of the intercostobrachial nerve, range of active motion, axillary web syndrome (AWS), satisfaction and safety with the technique. All the evaluations were conducted at HC III/INCA's physiotherapy ward by the physiotherapists and by unblinded investigation team at the first, seventh and thirstiest day post-surgery.

The variables were quantified by visual analogue scale (VAS) with scores ranging from 0 to 10, being 0, absence of pain and/or preserved sensitivity and 10, the most intense pain and/or discomfort due to local sensitivity. Pain intensity according to VAS was categorized as mild (1-2), moderate (3-7) and strong (8-10).

The active range of motion (ROM) was evaluated by asking the patient to exert the greatest possible ROM and visually classified as incomplete (below 90°), functional (90-160°) and complete (above 160°). The other outcome was the presence of AWS evaluated by palpation.

The patients were cared and briefed by the multidisciplinary team with nurses, nutritionists and physiotherapists, with guidance about postoperative care and signs to watch about surgical wound, attention with the drain and dressing, nutritional and physiotherapeutic support and were referred for dressing management approximately at the seventh postoperative day.

As a routine of the institution, all the patients are guided about postoperative care and home exercises at the first day post-operation and received a booklet with guidelines.

The kinesio taping was applied after the first dressing prior to hospital discharge with a sterile micropore tape on the wound to avoid contact with the tape glue. The 7 cm-width kinesio taping Vitaltape® was utilized. The tape was stretched to the maximum over the plastron and finalized with two 2-3 cm width ends. Matched to the patient body characteristics, the correct extension of the tape was applied by skilled physiotherapists.

The participants of the intervention group were handed over a booklet with home guidelines and a phone contact with the investigators in case of any complication with the tape. Had no local reactions appear, they were guided to keep the tape until the seventh postoperative day and removed by the physiotherapy team before the routine visit with the nursing team.

The Shapiro Wilk test was adopted to analyze the normality of the data, with p-value >0.05 for normal distribution. Descriptive analyzes were performed for the baseline characteristics of each group (intervention and control). For the continuous variables, central tendency and dispersion measures were calculated and to compare the differences of the means between the groups for the continuous variables with normal distribution, the test *t* of independent samples was calculated. The categorical variables were described by relative and absolute frequencies and compared for the intervention and control groups through the chi-square test or Fisher exact test according to the number of individuals in the different categories of the variable analyzed.

The Statistical Package for the Social Sciences (SPSS) version 20.0. was utilized for the analyzes.

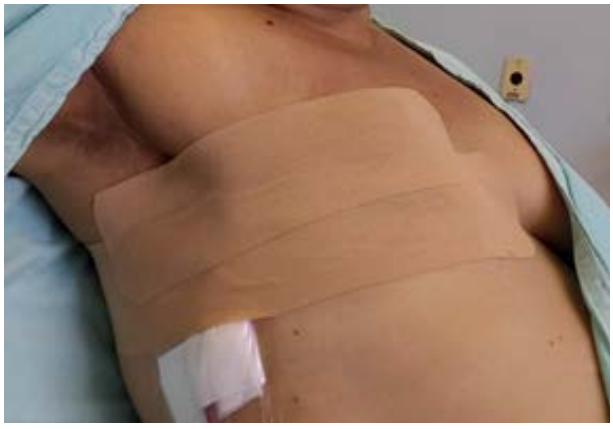

Figure 1. Application of kinesio taping at the first postoperative day

RESULTS

In all, 107 patients were enrolled, one withdrew the Informed Consent Form during the study. Post-randomization, 54 patients were assigned to the intervention group and 52 to the control group. No differences between the two groups were found in relation to skin color, marital status, education, body mass index, comorbidities, clinical and molecular staging, neoadjuvant treatment, type of surgery and axillary approach (Table 1). The mean age of the sample was 56.78 years with standard-deviation of 11.19, mean of 55.17 years for the intervention group and 58.46 for the control group. The mean of lymph nodes removed was 9.75±7.03 (not included in the table).

As the primary outcome of the study, pain was detected at the local of application of the compressive tape in 15.1%, 24.5% and 28.3% of the intervention group and in 9.8%, 11.8% and 17.6% of the control group in the evaluations of the first, seventh and thirtieth postoperative day, respectively, but no significant difference was found between the groups for pain (Table 2), or its intensity.

Of the 13 patients reporting pain in the first postoperative day, two (15.4%) of the intervention group and four (30.8%) of the control group reported mild pain and five (38.4%) of the intervention group and two of the control group (15.4%) reported moderate pain. Of the 19 patients with pain at the evaluation of the seventh postoperative day, one missing occurred. Of the remaining, four (22.2%) of the intervention group and one (5.6%) of the control group reported mild pain; six (33.3%) of the intervention group and two (11.1%) of the control group, moderate pain and three (16.7%) of the intervention and two (11.1%) of the control group reported intense pain. Of the 14 patients with pain in the evaluation of the thirtieth postoperative day, three (12.5%) of the intervention group and two (8.3%) of

Table 1. Distribution of the intervention group (n=54) and control group (n=52) according to the clinical and sociodemographic variables. Rio de Janeiro, Brazil, 2021

	Variables	Intervention n (%)	Control n (%)	p
Skin color	White	11 (47.8%)	12 (52.2 %)	0.735*
	Others	43 (51.8%)	40 (48.2%)	
Marital status	With spouse	26 (48.1%)	28 (51.9%)	0.557*
	Without spouse	28 (53.8%)	24 (46.2%)	
Education	≥ 8 years of education	36 (56.3%)	28 (43.8%)	0.177*
	< 8 years of education	18 (42.9%)	24 (57.1%)	
Body mass index	Ideal	13 (52%)	12 (48%)	0.904*
	Overweight/ Obesity	41 (50.6%)	40 (49.4%)	
Arterial Hypertension	No	19 (42.2%)	26 (57.8%)	0.123*
	Yes	35 (57.4%)	26 (42.6%)	
Diabetes	No	42 (51.9%)	39 (48.1%)	0.736*
	Yes	12 (48%)	13 (52%)	
Clinical staging	0/I/IIA	11 (44%)	14 (56%)	0.102*
	IIB/IIIA	23 (65.7%)	12 (34.3%)	
	IIIB/IIIC	20 (43.5%)	26 (56.5%)	
Molecular staging	Luminal A	11 (52.4%)	10 (47.6%)	0.206*
	Luminal B	24 (43.6%)	31 (56.4%)	
	HER-2	3 (42.9%)	4 (57.1%)	
	Triple-negative	16 (69.6%)	7 (30.4%)	
Neoadjuvant chemotherapy	No	11 (42.3%)	15 (57.7%)	0.311*
	Yes	43 (53.8%)	37 (46.3%)	
Neoadjuvant target-therapy	No	46 (50.5%)	45 (49.5%)	0.842*
	Yes	8 (53.3%)	7 (46.7%)	
Neoadjuvant hormone therapy	No	40 (51.9%)	37 (48.1%)	0.736*
	Yes	14 (48.3%)	15 (51.7%)	
Breast surgery	Simple mastectomy	19 (55.9%)	15 (44.1%)	0.485*
	Radical mastectomy	35 (48.6%)	37 (51.4%)	
Axillary approach	BSL	17 (53.1%)	15 (46.9%)	0.768*
	AL	37 (50%)	37 (50%)	
Number of lymph nodes removed	0-10	32 (51.6%)	30 (48.4%)	0.762*
	11-20	16 (47.1%)	18 (52.9%)	
	21-35	6 (60%)	4 (40%)	

Captions: BSL = biopsy of the sentinel lymph node; AL = axillary lymphadenectomy.
(*) Chi-square test. Significant difference: p-value <0.05.

the control group reported mild pain; 11 (45.8%) of the intervention group and six (25%) of the control group reported moderate pain and one (4.2%) of each group reported intense pain.

No statistical significance in both groups for pain in the ipsilateral arm and change of sensitivity was found (Table 3).

No significant difference between the groups was found at the physical examination in relation to the range of motion and AWS in the evaluations of the seventh and thirtieth postoperative days. However, lower percent of patients with incomplete ROM was detected for the intervention group (7.4% and 7.5%) comparing with the control group (14.1% and 21.6%), respectively in the seventh and thirtieth postoperative days (Table 4).

The patients were interviewed in the first seven-days evaluation and were asked about safety and satisfaction with the intervention. 53 patients (98.2%) felt safer, one

(1.8%) reported no change and none of them felt less safe. In relation to satisfaction, 39 (72.2%) claimed they were very satisfied, ten (18.6%), average satisfaction, three (5.5%), very satisfied and two (3.7%) did not respond.

DISCUSSION

Pain post breast cancer treatment is common. A recent systematic review with 3,746 patients found that postoperative incidence was 29.8%. In the present study, the incidence of pain at the plastron ranged from 11.8% to 17.6% in the control group and 13% in the intervention group in the three evaluations[1].

No statistically significant difference of the seven-days evaluation was found between the groups for the primary outcome of pain at the plastron soon after the compressive bandage was removed (p=0.102). A current study by Tornatore et al.[16] with 99 patients post knee arthroplasty

Table 2. Pain at the plastron of the intervention and control groups

		INT n (%)	CON n (%)	*p	INT n (%)	CON n (%)	*p	INT n (%)	CON n (%)	*p
		1 day			7 days			30 days		
Pain at the plastron **	**No**	45 (84.9)	46 (90.2)	**0.415***	40 (75.5)	45 (88.2)	**0.092***	38 (71.7)	42 (82.4)	**0.197***
	Yes	8 (15.1)	5 (9.8)		13 (24.5)	6 (11.8)		15 (28.3)	9 (17.6)	

Captions: INT = intervention group; CON = control group.
(*) Chi-square test.
(**) Due to missing, the total changed. p<0.05 was considered significant difference.

Table 3. Pain in ipsilateral arm and paresthesia in intervention and control groups

		INT n (%)	CON n (%)	*p	INT n (%)	CON n (%)	*p	INT n (%)	com n (%)	*p
		1 day			7 days			30 days		
Arm pain ***	**Yes**	3 (5.6)	4 (7.8)	**0.639****	23 (42.6)	16 (32)	**0.260***	22 (40.7)	22 (43.1)	**0.804***
	No	51 (94.4)	47 (92.2)		31 (57.4)	34 (68)		32 (59.3)	29 (56.9)	
Plastron paresthesia ***	**Yes**	26 (48.1)	23 (45.1)	**0.754***	36 (66.7)	25 (49)	**0.067***	28 (51.9)	21 (41.2)	**0.273***
	No	28 (51.9)	28 (54.9)		18 (33.3)	26 (51)		26 (48.1)	30 (58.8)	
Arm paresthesia ***	**Yes**	16 (29.6)	15 (29.4)	**0.980***	31 (57.4)	32 (62.7)	**0.577***	32 (59.3)	37 (72.5)	**0.152***
	No	38 (70.4)	36 (70.6)		23 (42.6)	19 (37.3)		22 (40.7)	14 (27.5)	

Captions: INT = intervention group; CON = control group.
(*) Chi-square test.
(**) Fisher exact test
(***) Due to missing, the total changed. p<0.05 was considered significant difference.

Table 4. Range of motion and Axillary Web Syndrome (AWS) – intervention and control group

		INT n (%)	CON n (%)	P	INT n (%)	CON n (%)	P
		7 days			30 days		
ROM***	**Complete**	16 (29.6)	9 (18.8)	**0.287***	24 (45.3)	22 (43.1)	**0.108***
	Functional	34 (63)	32 (66.7)		25 (47.2)	18 (35.3)	
	Incomplete	4 (7.4)	7 (14.1)		4 (7.5)	11 (21.6)	
AWS***	**No**	53 (98.1)	50 (98)	**1.000****	44 (81.5)	39 (76.5)	**0.528***
	Yes	1 (1.9)	1 (2)		10 (18.5)	12 (23.5)	

Captions: ROM = range of motion; AWS = axillary web syndrome; INT = intervention group; CON = control group.
(*) Chi-square test.
(**) Fisher exact test .
(***) Due to missing, the total changed. p<0.05 was considered significant difference.

were divided in three groups: the first with kinesio tape associated with lymphatic drainage; the second, only drainage and the last, with tape alone with pain evaluation at the seventh postoperative day. The authors concluded that neuromuscular bandage alone had no significant result for pain reduction but is applications associated with lymphatic drainage significantly reduced the pain and edema in comparison with the other groups.

Similarly to the randomized clinical trial by Genç et al.[17] with 74 patients submitted to total thyroidectomy randomized with kinesio taping and sham tape during seven days post-operation, despite a significant difference between the groups in relation to reduction of the pain in favor of the intervention group (p=0.006), the interaction of the group and time was not statistically significant (p=0.838). On the other hand, in a randomized clinical trial by Brockmann et al.[15] with 39 patients submitted to cardiac surgery, the groups were divided in usual care and usual care with kinesio tape applied bilaterally on the infraclavicular and lateral region of the abdomen with a significant reduction of postoperative acute pain (p<0.018) and use of opioid analgesics by the intervention group.

Two randomized clinical trials[18-19] found positive results for kinesiology taping with significant difference to reduce pain in the initial post operation – evaluation from one to two weeks – but the same effect did not continue in the subsequent phase, 24 days and six weeks. One of the studies[18] used neuromuscular *versus* sham tape with kinesiology tape until 24 days of post-operation of arthroscopy of the shoulder[18] and the other[19] utilized a physiotherapy program associated or not to kinesio tape for two weeks post-operation of knee[19] arthroscopy. No significant difference of the evaluation of the pain in late 30-days post-operation was found in the present study (p=0.217).

No significant difference of the intensity of the pain at the plastron between the intervention and control groups was found in this study. A prospective comparative post-operation study of orthopedic surgery has also concluded there was no significant difference of the mean intensity of acute pain in both groups (p=0.93)[20]. The studies of the systematic review by Wang et al.[1] addressing this variable enrolled 1,414 patients, 19% of them reported mild pain, 11.4%, moderate pain and 10.9%, intense pain compared to the present study which found higher frequency for moderate pain in both groups, ranging from 33.7% to 45.8% in the intervention group and 11.1% to 25% in the control group. Mild and moderate pain frequency were similar to the systematic review.

During the physical examination, pain evaluation was divided topographically in plastron region, the target-area of the tape and the arm region, attempting to circumscribe the results for better analysis of local effects. Arm pain can be associated with nerve lesion of the intercostobrachial[24] and the presence of AWS[25], among other factors. In this study, arm pain ranged from 11.8% and 17.6% in participants of the control group and 15.1% and 28.3% in the intervention group after the evaluations of the seventh and thirtieth day, respectively. AWS presented minimum occurrence in the first week with an important increase in the 30 days evaluation, ranging from 18.5% and 23.5%, in the intervention and control groups, respectively. Its incidence is mainly related to the type of axillary approach adopted, varying from 11% to 58% after the biopsy of the sentinel lymph node and from 38% to 72% at axillary emptying[26-28]. Axillary lymphadenectomy occurred in 69.8% of the population investigated.

No statistic difference between the groups was found for paresthesia in any of the evaluations. The groups reached similar results ranging from 48.1% to 66.7% in the intervention group and 41.2% to 49% in the control group for plastron paresthesia and 29.6% to 59.3% in the intervention group and 29.4% to 72.5% in the control group for the topography of the ipsilateral arm. Change of sensitivity at the internal region of the arm or axilla reached 61.2%[9] after 50-days evaluation postoperatively with a similar population.

Another variable evaluated in the current study at the physical examination was ROM. Despite no statistical difference was encountered in the groups, 92% of the intervention group had complete and functional range since the first week and incomplete ROM in the 30-days evaluation of 21.6% in the control group and only 7.5% in the intervention group (p=0.108). Studies with secondary outcomes to functionality have found no differences among the groups as well with or without kinesio tape of cervical ROM in thyroidectomy surgeries[17] and postoperative knee flexion of total knee arthroplasty[16]. A study[14] with patients submitted to total knee arthroplasty divided in groups of standard physiotherapy with and without kinesio tape applied in the second postoperative day and remaining for nine days in average with periodical change found statistically significant results of functional capacity at the thirtieth postoperative day measured by the six-minute walk test (p=0.005)[14].

Post kinesio tape complications as hyperemia, desquamation and allergies are rare[18]. None of the patients investigated in the current study discontinued the follow-up due to complications. The postoperative seventh-day evaluation interview revealed that 72.2% of them were very satisfied with the technique and 98.2% felt very safe, a result similar to other studies[15,16].

The comparative, prospective, randomized design is a robust approach with a homogeneous sample. In addition, it is the first clinical trial evaluating the association of

pain with kinesio tape applied with maximum traction force (compressive) and on the surgery wound in postmastectomy patients. All the studies in the discussion herein adopted kinesio tape with lymphtaping method with tension from 0% to 25% and in adjacent areas of the surgical incision[14-19].

Unblinded investigators, use of analgesics and the preservation of the intercostobrachial nerve which were not evaluated in the surgical description, the small sample in view of the great incidence of postoperative pain and seven-days tape applications only since other studies apply for larger periods are the study limitations.

CONCLUSION

Kinesiologic tape applied on the plastron in the first postoperative day in women submitted to mastectomy was not associated with pain, intensity, range of motion, AWS and paresthesia. More prospective studies with larger samples, another method of application or more time of use may be necessary to produce definitive evidences for that purpose.

CONTRIBUTIONS

All the authors contributed substantially to the study design, acquisition, analysis and interpretation of the data, wording and critical review. They approved the final version to be published.

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DECLARATION OF CONFLICT OF INTERESTS

The author Anke Bergmann is the scientific-editor of INCA's Revista Brasileira de Cancerologia and has potential conflict of interests. The other authors have no conflict of interests to declare.

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None.

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