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Degree of satisfaction and safety of taping in the immediate postoperative period of breast reconstruction

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ABSTRACT

Introduction: Taping is a widely used physiotherapy resource in clinical practice; however, it is a technique that warrants further study to confirm its safety in postoperative care. **Objective:** To evaluate the degree of satisfaction and safety in the application of taping in the immediate postoperative period of breast reconstruction. **Methods:** A quantitative study was conducted with 47 patients who answered a questionnaire about satisfaction and safety of the technique, where they underwent taping in the immediate postoperative period of breast reconstruction between June 2023 and June 2024. **Results:** Regarding patient comfort with taping and perceived safety of their scars, 98% of patients gave positive responses (n=46) and 68% rated their level of satisfaction as excellent during the use of the elastic bandage (n=32). All participants felt that taping offered more safety and aided in recovery. Regarding skin alterations, 6.4% (n=3) reported allergies. **Conclusion:** The use of taping propensity was observed in the immediate postoperative period of breast reconstruction demonstrated a positive, satisfactory, and safe outcome.

KEYWORDS: mammoplasty; elastic bandage; physiotherapy.

INTRODUCTION

Historically, breast reconstruction dates back decades, but significant advances have been made in recent years. Initially, reconstruction was often postponed until after cancer treatment, but now it is often performed simultaneously with mastectomy, thanks to multidisciplinary approaches involving plastic surgeons, oncologists, and breast specialists[1].

Breast reconstruction is a crucial procedure for women who have undergone mastectomy because of breast cancer or other medical conditions, such as breast hypertrophy. This intervention not only restores the shape of the breast but also plays a vital role in the emotional and psychological recovery of patients[2].

Several breast reconstruction techniques are available, each with its own advantages and considerations. Reconstruction with breast implants is a common option, in which silicone prostheses are inserted to restore volume[3]. Another approach is reconstruction with autologous tissue, which uses tissue from the body itself, such as abdominal muscle (TRAM method) or latissimus dorsi, to reconstruct the breast more naturally[4]. Lipofilling can also be used; in this case, the patient's own fat, usually harvested from areas such as the abdomen, thighs, or buttocks, is removed and injected into the breast to restore lost volume. This method offers several advantages, including natural and long-lasting results, as well as minimizing additional scarring[5].

Breast reconstruction that goes beyond physical restoration is crucial. For many women, it plays a vital role in restoring self-esteem and confidence, helping to overcome the emotional trauma caused by breast cancer and breast loss[6]. Studies have demonstrated the significant psychological benefits of breast reconstruction, including improved quality of life and emotional well-being for patients[7].

In Brazil, excluding non-melanoma skin cancers, breast cancer is the most common cancer in women in all states, with the highest incidence in the South and Southeast regions. For each year of the 2023–2025 triennium, the expected incidence is 41.89 cases per 100,000 women[8].

Due to the imminent growth of this neoplasm, psychological and self-esteem impacts on women's health arise, which is why women opt for surgical reconstruction. This intervention is

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a safe procedure that does not increase the risk of recurrence or influence the diagnosis of the disease[9].

Within the context of new surgical rehabilitation techniques, taping is a resource used by physiotherapists in the immediate and late postoperative period, both to prevent and treat surgical complications. This method consists of an elastic bandage that increases the interstitial space of the skin, improving blood and lymphatic circulation. Another property of taping is the activation of the somatosensory system, through the recruitment of fibers that stimulate a network of neurons that transmit sensory information inhibiting pain[10].

Taping, also called kinesio taping, was developed by Kenzo Kase around the 1970s, spreading to Europe, Asia, and America 20 years later. Initially, it was applied by orthopedists and therapists for orthopedic dysfunctions, and later, it has since expanded to encompass dysfunctions of other systems, including the lymphatic system.

Made of cotton (100%), water-resistant, hypoallergenic, heat-adhesive, and having longitudinal stretch, it resembles skin tissue in thickness and weight, as well as its elastic property of up to 140%. By combining the elasticity of the tape with the stretching of the skin, the skin is lifted, increasing the spaces of the dermis and epidermis, thus decompressing mechanical and pain receptors, displacing lymphatic flow, improving microcirculation, and softening the tissue[11].

The aim of this study was to analyze whether the application of taping in the immediate postoperative period is safe and provides comfort for patients undergoing breast reconstruction.

METHODS

This study was conducted using an online research form approved by the Research Ethics Committee of Cesumar University (UNICESUMAR), under opinion number 7.025.968. Characterized as quantitative, it sought to identify whether the use of taping is safe in the immediate postoperative period of breast reconstruction. The method used in this work sought to numerically analyze the effects, results, and impacts of an action or service[12].

This study included women who underwent physiotherapy treatment at the Instituto Sul Paranaense de Oncologia (ISPON), located at Rua Francisco Ribas, 638, in the city of Ponta Grossa, Paraná. The institute has several professionals and treatments focused on cancer patients, aiming at the prevention, diagnosis, and rehabilitation of women undergoing cancer treatments.

The taping intervention was performed by the ISPON physiotherapist and consisted of a single application in the immediate postoperative period, within the surgical center (Figure 1).

The technique used was multilayer without tension (Figure 2). The elastic bandage was removed by the same professional seven days after application.



Source: the authors, 2024.

Figure 1. Taping applied postmastectomy.



Source: the authors, 2024.

Figure 2. Application of taping over a sterile transparent film dressing in the immediate postoperative period following breast reconstruction with inverted T scars.

The inclusion criteria were patients who underwent taping application in the immediate postoperative period of breast reconstruction between June 2023 and June 2024, with a minimum age of 18 years. The exclusion criteria were patients who refused to participate in the study or who did not answer the questionnaire, were illiterate, had cognitive impairment, or did not have internet access.

The study sequence had as its first phase the selection of medical records within the pre-established criteria to obtain the contact telephone number of each of the participants. Subsequently, agreement with the terms of the informed consent form and response to the satisfaction questionnaire were sought.

The patients were contacted via WhatsApp, through which the research was explained. A Google Forms questionnaire tool was used, which included an icon that opened the consent form,

presented to the patients online. This was the first stage of the questionnaire, which had the options "I agree and accept the terms" or "I do not agree to participate." Therefore, the remaining questions were only answered if the patient agreed to participate; otherwise, the questionnaire would end at that point.

The 11 questions in the Google Forms were all aimed at a self-assessment by the patients regarding treatment with elastic bandages in the immediate postoperative period. The questions were as follows: 1- Did you find the taping comfortable during its use? 2- Did you feel the taping gave you more security? 3- Did you find it important to use taping as a resource in the postoperative period of breast reconstruction? 4- Did you feel the taping helped you recover faster? 5- Did you feel secure about your scars while using the tapes? 6- Did you experience an allergic reaction to the tape? 7- Did you experience skin irritation while using the tape? 8- Did you experience skin lesions caused by the tape in the first 7 days postsurgery? 9- Did you find the taping was easily removed by the physiotherapist who applied it? 10- Did you feel pain during the removal of the tapes? 11- What was your level of satisfaction with the use of taping in the immediate postoperative period? Questions 1 through 10 had "yes" or "no" answer options, while the satisfaction level question offered five options: very poor, fair, good, very good, and excellent.

After completing the questionnaire, the data obtained were analyzed using percentages.

RESULTS AND DISCUSSION

In the analysis of patient records, it was identified that taping was applied in 63 of them in the immediate postoperative period of breast reconstruction. Of these patients, 14 did not respond to the questionnaire within the proposed period, one died, and one refused to participate in the study; therefore, the final sample consisted of 47 participants.

When questioned about the comfort level of the taping and the safety regarding scars during its use, the responses were positive in 97.9% (n=46) of cases. It is believed that these findings were due to the taping being applied in multiple layers without tension, which may have accounted for the comfort. Excessive tension could cause discomfort and skin lesions. Regarding safety concerning scars, the positive responses probably occurred because the application technique used provided better breast support, avoiding traction on the scars, especially when the patient was not wearing a bra, such as during showering.

The questions regarding the overall sense of security provided by taping, the importance of this resource in the postoperative period, and the elastic bandage as a tool for faster recovery were unanimously approved by the patients involved in the study (n=47), demonstrating excellent acceptance of the technique and its benefit to the patients.

A study conducted by Martins et al. demonstrated a low incidence of skin alterations, good tolerance to taping, and a sense of security in patients with lymphedema. In the randomized clinical trial by Seriano et al., with 107 patients undergoing mastectomy, 98.2% reported feeling safer with the intervention, a result similar to that presented in the present study[13,14].

When asked about skin changes and allergies caused by the bandage, 6.4% (n=3) of the study population reported allergic complaints (self-reported by the patient, without professional evaluation), 27.7% (n=13) presented with irritation, and 10.6% (n=5) had skin lesions caused by taping in the first seven postoperative days. Irritation may have occurred mainly in patients who used taping on warmer days, caused by sweat. Ideally, this skin evaluation should be done prospectively by the patient's physiotherapist or doctor. Some information regarding skin changes was reported in the medical records; however, since the questionnaire was anonymous, it was not possible to correlate these data. It is known from the medical records that there were no cases of blister formation, which generally occur if the taping is applied with too much tension[15]. In the immediate postoperative period of all these patients, the bandage was applied with zero tension, which theoretically prevents the formation of blisters on the skin.

All patients underwent treatment at the same facility, where it is protocol to use a transparent wound dressing over the scars, which may also have caused some irritation or allergy in the patients. Kinesio Tape adhesive can cause skin irritation, leading to redness, itching, or discomfort, especially in people with sensitive skin or allergies to certain types of adhesives. To minimize these complications, it is important to perform an adhesion test before application and observe any signs of adverse reaction after use. Contact dermatitis can occur from prolonged or repeated use of the taping and trigger an allergic reaction to the tape material, resulting in symptoms such as inflammation, blisters, and skin rashes[16].

According to Seriano et al., adverse events after the use of the bandage may include hyperemia, peeling, and allergies, as found by Martins et al., with an incidence of 41.7%. In the study by Chi et al., with 20 patients undergoing abdominal plastic surgery, there were no reports of skin lesions or irritations[13,14,17].

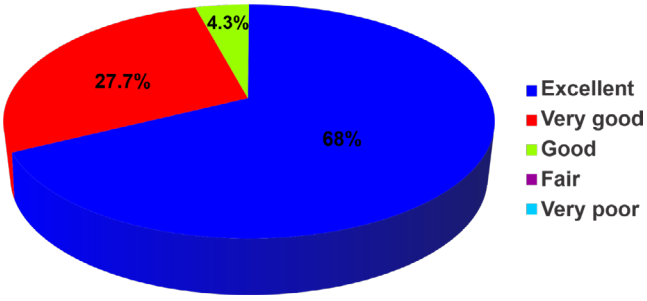
It was identified in the medical records that the bandage was always removed by the same physiotherapist who applied it in the surgical center, usually after one week, on the same day that the patient had a medical consultation to evaluate the surgery. Only 8.5% (n=4) of the participants reported difficulty in tape removal, and 14.9% (n=7) stated that they felt pain during this process. Removing the taping can cause discomfort, as the adhesive can pull some hairs and cause mild pain. The female breast is a region with a low concentration of hair, therefore the removal of the bandage should not be a cause of much pain. Hot days can increase the sticking of the adhesive

to the skin and thus make its removal a little more difficult. Special oily or moisturizing solutions should be used to facilitate the removal of the taping and cause less discomfort for the patient. The taping intervention should be performed by a qualified physiotherapist[18].

Finally, the degree of satisfaction of the study participants (Figure 3) was excellent for 68% (n=32), very good for 27.7% (n=13) and good for 4.3% (n=2), a result similar to that of Martins et al., who obtained 75% (very satisfied), 20.8% (fair satisfaction) and 4.2% (somewhat satisfied)[13]. It is believed that patient satisfaction with this resource is due to the feeling of security in the recent postoperative period. Positive results were also found in the study by Seriano et al., where 72.2% of the study participants reported total satisfaction, 18.6% fair satisfaction, and 5.5% little satisfaction[14].

Despite the positive results reported regarding patient satisfaction with the use of taping, it is observed that there was still no standardization of physiotherapy treatment with this resource in the immediate postoperative period. It is important to emphasize that gaps remain to be investigated regarding its effects on analgesia, scar quality, edema, and fibrosis[17].

In the literature, studies in the field of oncology are focused on lymphedema, revealing satisfactory results. On this subject, Fabro et al. assessed that the use of elastic bandages in seroma after breast cancer surgery is an easy, quick, and non-invasive resource, in addition to being considered safe and well-accepted by patients[18]. The physiological effects of taping for the treatment of postoperative edema are due to the mechanosensory impact of the elastic bandage, since it causes elevation, tension, and pressure on the skin and, because of this, there is an increase in interstitial space, improving fluid circulation and drainage into the lymphatic vessels[19].



Source: the authors, 2024.

Figure 3. Results of the sample population's satisfaction level regarding the use of taping in the immediate postoperative period.

In general, articles discuss the use of taping as a physiotherapy resource in the postoperative period of plastic surgeries, with the purpose of preventing edema, fibrosis, pain, and scarring resulting from the surgical procedure, as well as treating these cases. It is also worth noting that taping should be applied by qualified professionals with specific training in the method because, to be effective, the physiotherapist conducts a meticulous assessment of the tissue, using the most appropriate method for each case, with the aim of providing a positive, efficient, and functional recovery[20].

CONCLUSION

The main finding of this study was the high degree of satisfaction and safety of applying taping in the immediate postoperative period of breast reconstruction. To date, no other studies have been identified that have analyzed the satisfaction and safety of the technique in this type of postoperative period.

Considering the importance of scientific studies for building a solid and proven knowledge structure, the application of taping in the immediate postoperative period of breast reconstruction in the present study presented acceptable comfort and safety. It is necessary to increase the number of publications that seek clarification about this form of taping use, since a broad theoretical basis and preferably randomized studies are ways to obtain rigorous and assertive technological knowledge.

Furthermore, more studies on the subject are needed as there is a scarcity of research focused on the immediate postoperative period of oncological breast reconstruction compared to the number of studies directed at plastic surgery, as well as analyzing whether the use of taping can prevent postoperative complications.

AUTHORS' CONTRIBUTIONS

HR: Investigation, Writing – review & editing. AJM: Investigation, Writing – review & editing. ALSS: Methodology, Supervision, Writing – review & editing. FPM: Supervision. LLC: Conceptualization, Methodology, Supervision, Writing – review & editing.

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