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OCCURRENCE OF SEROMA POST-MASTECTOMY AND CARE WITH ASPIRATION DRAIN IN THE HOUSEHOLD

OCORRÊNCIA DE SEROMA PÓS-MASTECTOMIA E O CUIDADO COM O DRENO ASPIRATIVO NO DOMICÍLIO

APARICIÓN DE SEROMA POST MASTECTOMÍA Y EL CUIDADO COMO DRENADO ASPIRATIVO EN CASA

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ABSTRACT

Objectives: to identify the occurrence of seroma and other complications in women after surgery for the treatment of breast cancer and to evaluate the care provided with drainage and surgical insertion at home. **Method:** descriptive study, performed in a university hospital in the interior of the State of São Paulo. Three evaluations were performed considering the surgical incision and the presence of the seroma, besides identifying how careful the drainage was. **Results:** 39 women, aged 25 to 81 years, 59% mastectomies participated, 82.1% underwent axillary lymphadenectomy and 84.6% needed help to take care of the drain. Between five and ten days after surgery three cases of seroma, occurred and after 30 days, another ten occurred that were managed local compunctions. **Conclusion:** the occurrence of seroma and the care during the permanence of the drain should be highlighted in the planning of nursing care. **Descriptors:** Seroma; Breast Neoplasms; Care; Nursing.

RESUMO

Objetivos: identificar a ocorrência de seroma e outras complicações em mulheres após a cirurgia para tratamento do câncer de mama e avaliar os cuidados dispensados com o dreno e a inserção cirúrgica no domicílio. **Método:** estudo descritivo, realizado em um hospital universitário do interior do Estado de São Paulo. Foram realizadas três avaliações, considerando a incisão cirúrgica e a presença do seroma, além de identificar como foi o cuidado com o dreno. **Resultados:** participaram 39 mulheres, de 25 a 81 anos, 59% mastectomias, 82,1% realizaram linfadenectomia axilar e 84,6% necessitaram de ajuda para cuidar do dreno. Entre cinco a dez dias pós-cirurgia ocorreram três casos de seroma e, após 30 dias, ocorreram outros dez que foram manejados com punções locais. **Conclusão:** a ocorrência de seroma e os cuidados durante a permanência do dreno merecem destaque no planejamento do cuidado de Enfermagem. **Descritores:** Seroma; Neoplasias da Mama; Cuidado; Enfermagem.

RESUMEN

Objetivos: identificar la aparición de seroma y otras complicaciones en las mujeres después de la cirugía para el tratamiento de cáncer de mama y evaluar la atención proporcionada con el drenaje y la inserción quirúrgica en casa. **Método:** estudio descriptivo, realizado en un hospital universitario del estado de São Paulo en Brasil. Tres evaluaciones se llevaron a cabo, teniendo en cuenta la incisión quirúrgica y la presencia de seroma, además de identificar como fue el cuidado con el drenaje. **Resultados:** participaron 39 mujeres de 25 a 81 años, 59% mastectomias, 82,1% realizaron linfadenectomía axilar y 84.6% necesitaron de ayuda para cuidar del drenado. Entre cinco a 10 días después de la cirugía se produjeron tres casos de seroma y después de 30 días, hubo otros 10 que fueron administrados reparos locales. **Conclusión:** la aparición de seroma y los cuidados durante la permanencia del drenaje merecen destaque en la planificación de cuidados de Enfermería. **Descriptor:** Seroma; Neoplasias de la Mama; Cuidados; Enfermería.

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INTRODUCTION

The therapeutic modalities used in the treatment of breast cancer have contributed to the control of the disease and increased survival, but, on the other hand, expose women to a series of physical and emotional complications.¹

Among the physical complications caused by the surgical treatment are lymphedema, limitation of shoulder movement, chronic pain, changes in the sensitivity of the arm and arm pits, among others, which will interfere with the daily life and quality of life of these women.¹⁻²

Regardless of the type of surgery used, usually associated with axillary lymphadenectomy (LA), which consists of removal of vessels and lymph nodes, - LA can lead to damage in the transport of lymph which, when it accumulates in the interstitial spaces around the surgical site, affects the arm, trunk and remaining tissues of the breast homolateral to the surgery. LA is associated with up to 60% of surgical morbidity, besides promoting the formation of seroma, infection, stiffness of the arm or shoulder homolateral to surgery, torpor, pain, loss of muscle strength and lymphedema.³⁻⁴

Seroma can be defined as an accumulation of serous fluid that develops in the space between the chest wall and the skin, and its incidence occurs in more than 50% of breast surgeries. Their training usually ceases a few weeks after the surgical procedure, but, may persist for months. Its occurrence is associated with an increase in the hospitalization period, the need for frequent aspiration punctures, delayed adjuvant treatments, delayed healing, necrosis, surgical wound infection, functional impairment and lymphedema formation.⁵

Age above 45 years, high body mass index (BMI), and arteriosystemic hypertension (ASH) are risk factors for seroma. However, the extensive operative field, the rupture of the lymphatic channels, the dead space formed by the dissection and surgical resection of the axillary region and the great mobility of the area can also compromise the lymphatic drainage at the site of this complication.

In order to reduce the dead space left after AL, and consequently, the seroma formation, new surgical techniques, which use vacuum drains and defibrin glue during the procedure, have been tested. The benefits of postoperative aspiration drainage are questionable and the studies conducted to date are still inconclusive as to the best technique.⁷

Despite the controversies, the drains are used in the surgical techniques currently employed and, therefore, it is necessary to educate women in the care related to their handling. In this sense, it is important to emphasize the educational role of nursing in monitoring, supporting and offering information related to immediate and long-term care, as well as to resolve doubts and uncertainties and emphasize the symptoms that must be observed.⁸

In this context, this study has as objectives to identify the occurrence of seroma and other complications in women after surgery for breast cancer treatment, as well as to evaluate the care given with drainage and surgical insertion at home.

METHOD

Prospective and exploratory study, carried out in an inpatient unit of a university hospital in the interior of the State of São Paulo. The study was approved by the Research Ethics Committee of the institution, according to the CAAE: 0072.0.004.000-10.

Data were collected from May 2010 to January 2011. Women after surgery for breast cancer who were admitted to the referred hospital and who were discharged from the hospital with closed vacuum drainage systems in the postoperative period.

The participants were evaluated in three moments, and the first evaluation occurred on the first postoperative day, while they were hospitalized in the Nursing Section of the Gynecology Unit. On this day, the women responded to a form containing the identification data and data on the disease and were advised on the care and handling of the drain and with the surgical insertion. These guidelines were based on the self-care manual with the postoperative suction drain of the institution's breast surgeries, which is routinely delivered to women at hospital discharge.

The second evaluation was performed on the return of the woman, which occurred between five and ten postoperative days, in the Outpatient Clinic of Mastology and Gynecological Oncology. At this moment, the presence of the drain, the residence time, the characteristics of the insertion site, the volume of drainage secreted and the conditions of the surgical site were evaluated. The drainage care was also questioned, seeking to identify aspects such as washing the hands, washing of the surgical site, position of the drain in the moments of rest, as well as the care and difficulties in their handling, such as redoing the vacuum and

measuring the volume of secretions. The presence of seroma, hematoma, dehiscence and lymphedema was also investigated.

To evaluate the volume of secreted drainage, women received a printed control, in which they should note the volume scorned daily. This form was provided by the study hospital as part of the nursing guidelines for hospital discharge.

To evaluate the presence of lymphedema, perimetry of the upper limbs was performed, with the woman standing, using a flexible tape measure, at seven points along the arm and forearm, according to the treatment protocol for post-mastectomy lymphedema established in the rehabilitation center for mastectomized patients.⁹

The third evaluation, approximately thirty days after the surgery, was also performed at the Mastology and Gynecological Oncology Outpatient Clinic and again the presence of seroma and the conducts taken were

investigated, as well as other intercurrentences presented. Again, perimetry of the upper limbs was performed to investigate lymphedema.

The data obtained in the three evaluations were organized in a Microsoft Excel worksheet, and after being transported to the program Epi Info version 3.3.2., And were analyzed through descriptive statistics.

RESULTS

Thirty-nine women, aged between 25 and 81 years old, were included, and 74.3% of them were in the 40-70 age group, 56.4% were married and 64.1% did not complete elementary school. The right breast was affected in 56.4% of the women, and, 59% of the surgeries were radical and 82.1% were submitted to LA surgery (table 1).

Table 1. Distribution of the women interviewed according to the laterality of the surgery, type of surgery and axillary lymphadenectomy. Ribeirão Preto (SP), 2011.

Variable	Category	N=39	%
Laterality of the surgery	Right	22	56,4%
	Left	17	43,6%
Type of Surgery	Mastectomy	23	59%
	Quadrantctomy	2	5,1%
	Tumorectomy	14	35,9%
Axillary lymphadenectomy	Yes	32	82,1%
	No	7	17,9%

Regarding the use of the post-surgery drain, it was verified that the residence time ranged from three to 20 days, with most of them withdrawing between five and ten days post-surgery. The volume of drainage liquid ranged from 60 mL to 1077 mL and those that remained longer with the drain had greater volume drained.

Regarding the presence of seroma, it was observed that, five to ten days after surgery, there were three (7.7%) cases of seroma, and 30 cases after surgery, occurred another ten (25.6%) cases, (table 2). For the removal of the accumulated fluid at the surgical site, after the drainage was removed, local punctures, were performed, and in some cases the procedure was repeated for

approximately one month, with visits to the hospital about two to three times a week. The volume of seroma punctured in the second evaluation ranged from 40 to 60 ml and, in the third evaluation, ranged from tem to 615 ml.

Regarding the intercurrentences related to the insertion of the drain, in the first post-surgery evaluation, 5.1% of the women presented drainage of secretion; 10.3% local flushing; 10.3% heat, and 25.6% pain, (table 2). Regarding the surgical site, 7.7% presented drainage of secretion, 7.7% local flushing, 7.7% heat and 20.5% reported pain. In most of these, the phlogistic picture evolved spontaneously and two women presented dehiscence in the surgical incision.

Table 2. Distribution of the women interviewed, according to the time of drainage, volume drained five to 10 days after surgery, presence of seroma and intercurrents at drain insertion. Ribeirão Preto (SP), 2011.

Variable	Categoria	Freq. Absoluta	%
Drain dwell time	5 to 10 days	31	79,4
	More than 10 days	6	15,5
	Less than 5 days	2	5,1
Volume drained from 5 to 10 days *	60 to 200 ml	11	35,4
	201 to 400 ml	8	25,8
	401 to 600 ml	7	22,5
	> 600 ml	3	9,6
Presence of seroma	5 to 10 days	3	7,7
	After or until 30 days of surgery	10	25,6
Intercurrences in drain insertion	Pain	10	25,6
	Heat	4	10,3
	Redness	4	10,3
	Secretion	2	5,1

* Of the 31 women who remained with the aspiration drain in the period of 5 to 10 days, two did not take the control form of the drained volume. Because of this, the N in the variable "Drained liquid volume of 5 to 10 days" is less than 31.

Regarding the evaluation of the occurrence of lymphedema (Table 3), it was observed, that by means of perimetry, in the 2nd evaluation, the differences in measurements between the arms ranged from zero to four centimeters and, in the third evaluation, from zero to four centimeters and a half, It was noted that about 10% of them, after 30 days of surgery, presented arm edema with measures compatible with lymphedema.

Among the 13 women who presented seroma at the surgery site, two presented a difference in perimetry in subsequent evaluations. One of them presented a difference between the arms of a centimeter and a half in the 2nd evaluation, which evolved to three and a half centimeters in the 3rd evaluation and, to the other, the difference was two centimeters in the second evaluation, four centimeters in the 3rd.

Table 3. Distribution of the interviewed women, according to the differences found in the upper limbs, in cm, observed in the two perimetry evaluations. Ribeirão Preto (SP), 2011.

Differences in Perimetry	Evaluation Period	
	2ª Evaluation	3ª Evaluation
0 cm	5 (12,8%)	6 (15,4%)
0, 5 - 2 cm	31 (79,4%)	29 (74,3%)
2,1 - 4 cm	3 (7,7%)	3 (7,8%)
>4 cm	---	1 (2,6%)

Concerning the drainage care, when investigating whether the woman did them or if she needed help, it was found that 84.6% needed help. In the first post-surgical evaluation, 94.9% of the women stated that guidelines on drainage care are necessary and essential for their achievement.

It is observed, in table 4, that most of the women incorporated the guidelines on drainage care, however, 5.1% expressed

difficulty clamping the extension, and 15.3%, to empty the collector. These difficulties did not prevent the procedures from being carried out by them. There was a manifestation of 30.8% of women regarding the need to seek the health service before drainage was withdrawn due to pain, fever, discharge of secretion at the insertion, obstruction of the system due to clots, difficulty to redo the vacuum or loss of the drain ahead of schedule.

Table 4. Distribution of the women interviewed, according to the mentioned care with the drain. Ribeirão Preto (SP), 2011.

Variable	Category	N=39	%
Washing of hands	Yes	39	100%
Washing of surgical site	Yes	39	100%
Use of ointment and solutions	No	36	92,6%
Redo the vacuum every day	Yes	38	97,4%
	No	1	2,6%
How many the vacuum was done a day?	1 time	11	28,6%
	2 times	25	64,1%
	3 times	3	7,7%
Clamp Drain Extension	Yes	39	100%
Measure the drained volume every day	Yes	39	100%
Disregard the secretion in the toilet	Yes	39	100%
Wash the drain pan	No	38	97,4%
At rest the drain was	On the floor	35	89,7%
	In another place	4	10,3%

Other activities advocated in the manual used in the service, aiming at self-care, are the practice of self-massage and upper limb movement. It was observed that the women reported insecurity to perform the movements and self-massage in the first postoperative days.

Regarding the causes that prevented the accomplishment of these activities were mentioned: the presence of the aspiration drain and pain in the surgical incision and/or the insertion of the drain. However, 30 days after surgery, self-care practices began to be

incorporated into the daily routine of women, who were more concerned about the prevention of lymphedema, the improvement of the range of movements and the sensitivity of the arm, as seen that such complications may impair the routine in which they were inserted before surgery.

Among women who entered the practice of arm movement, the frequency ranged from one to three times a day. In the first days after surgery, self-massage was null, but, after 30 days, 33.3% of women started it, (table 5).

Table 5. Distribution of the women interviewed, according to the movement of the arm and self-massage five to ten days after surgery and after 30 days of surgery. Ribeirão Preto (SP), 2011.

Evaluation Period	Automassage	Movement of the arm
2 nd Evaluation (five to ten days after surgery)		
Yes	-	3 (7,7%)
No	39 (100%)	36 (92,3%)
3 rd Avaliação (after 30 days of surgery)		
Yes	13 (33,3%)	25 (64,1%)
No	26 (66,7%)	14 (35,9%)

DISCUSSION

Most of the women participating in this study underwent radical surgeries for the treatment of breast cancer, accompanied by LA, which increases the incidence of postoperative complications. Morbidities related to more invasive surgical procedures, such as the occurrence of seroma and infection, have been associated with more advanced staging and more radical procedures.¹⁰

In a meta-analysis including 29 studies to assess risk factors associated with surgical treatment of breast cancer and the occurrence of lymphedema, the combined effect measure revealed a strong association with LA (HR = 2.5-2.6), Greater number of lymph nodes removed (HR = 1.2) and mastectomy (OR = 2.7-7.4).¹¹

As inclusion criteria, all participants in this study used closed vacuum drainage systems

postoperatively. Drainage systems emerged in the 1940s and revolutionized breast cancer surgeries. They continue to be employed in current surgical procedures, in an attempt to obliterate the dead space left after LA, and, thus favor and accelerate healing, decrease seroma formation, incidence of necrosis and infection of the surgical site.¹²

However, these benefits are still questioned, as demonstrated in the results of a systematic review that evaluated the effects of drainage of the wound healing after LA for breast cancer. These indicated a reduction in the incidence of seroma formation in women who used the postoperative aspiration drain (95% CI = 0.23-0.91). The data also revealed that the hospitalization time was 1.47 days higher in the group that used the aspiration drain (95% CI = 0.67-2.28) and that there were no statistically significant differences in infection rates among women who used (CI 95% = 0.44-1.12).¹³ Contrary to these findings,

another review study that aimed to evaluate the factors associated with seroma formation after surgery for breast cancer, pointed out that high pressure drains, promote an increase in the volume of drained fluid contributing to the formation of seroma.¹⁴

It was found, in this study that cases of seroma occurred, more frequently, in the late postoperative period and required repeated local punctures for periods that extended up to one month. To control the seroma, the treatment of choice for the women in the study were punctures indicated whenever and until when there is a complaint of discomfort of the woman.¹⁵

Regarding the duration of the aspiration drain, the recommendation is five to ten days of permanence, with daily volume between 30 and 50 ml for withdrawal.¹⁶ However this period may vary according to the protocol used in each institution. In this study, some women remained with the drain for up to 20 days.

This prolonged drainage period may be associated with a significant presence of seroma because the BMI ($p = 0.01$), body weight ($p = 0.03$), drained fluid volume ($p = 0.04$) and the duration of the drain ($p = 0.04$) are factors that may be predictors of seroma formation after surgery for breast cancer. However, other variables such as age, disease staging and chemotherapeutic treatment had no influence on seroma formation.¹⁷

Regarding the complications presented in the postoperative period, surgical site infection is a complication associated with the presence of seroma and the investigated women presented phlogistic signs at drain insertion and surgical site, besides surgical dehiscence. It should be noted that surgical site infection may also be associated with more aggressive procedures such as mastectomies compared to conservative procedures.¹⁸

Seroma formation after surgery is also associated with a lymphatic network impairment, leading to the development of lymphedema, and this complication was also observed in the studied women. An integrative review, aimed at analyzing the care provided to women affected by breast cancer and who performed LA, points out that the prevention of lymphedema begins in the preoperative period. Health professionals need to orient themselves in relation to the body posture that should be adopted in the postoperative period, besides encouraging adherence to rehabilitation treatments.¹⁹

A study of 130 women with breast cancer, aimed to explore the association of seroma

with symptoms of lymphedema and found that, patients who developed it had between 7.78 and 10.64 more chances of developing arm edema homolateral to surgery. Thus, seroma may be associated with the risk of developing lymphedema symptoms after treatment for breast cancer and it is recommended that women receive risk-reduction interventions.²⁰ In this study, it was found that among the four participants Who presented alterations in perimetry, between the second and third evaluation, two had seroma, demonstrated that the presence of the seroma may be one of the contributing factors in the development of lymphedema.

Another question evaluated was regarding the movement of the operated arm. There is no consensus on the best method to perform the exercises during the physical rehabilitation of breast cancer and its influence on postoperative complications. There is still controversy over which exercise program is able to minimize shoulder dysfunction, volume of secreted drainage, incidence of seroma, dehiscence, and the development of lymphedema. In view of a variety of programs, there is a need for homogenization of methodological procedures in studies of this nature, so that their reproducibility is possible in others.²¹

A study that discusses the role of physical exercise after breast cancer, states that its influence is positive in post-surgical recovery. It also reports that many women experience fatigue, nausea, decreased aerobic capacity, arm mobility and muscle strength during adjuvant treatment and exercise is indicated to increase physical capacity and cardiopulmonary conditioning, improve shoulder mobility, assist in the reduction of body weight and prevent accumulation of lymph in the upper limb.²² The aim of the intervention should be the deficit in flexibility and muscular strength, besides soft tissue fibrosis, lymphatic insufficiency, among others, and are recommended stretching, aerobic conditioning, resistance exercises and postural work as soon as possible after surgery.²³

It should be noted that the discomfort generated by the presence of the drain, added to the insecurity of women, contributed to the non-movement of the arm homolateral to the surgery observed in this study, which is contrary to recommendations regarding arm care and adequate physical exercises for the postoperative period.²⁴ Adherence to arm movement was greater after a detailed explanation of the importance of these in the prevention of lymphedema and in the

improvement of the range of movements of the upper limb and observed after 30 days postoperatively.

In this study, home drainage care was also evaluated, emphasizing the use of efficient vacuum drainage and constant vigilance, to avoid obstructions. Most of the women reported that they performed them, although some reported the need for family help in this process and highlighted some difficulties, which may be a factor that interferes with prolonged use of the drain.²⁵

The site of this study recommends the hospital discharge of women undergoing surgery for breast cancer on the first postoperative day, in the absence of intercurrent. However, it has been observed that this post-surgical period generates several feelings in women such as fear, impotence and insecurity, which can interfere with self-care and cause some postoperative complications. A study of mastectomized women showed that, when they were hospitalized, they perceived dependence on others as a normal situation, however, when they arrived at their homes, they would be able to resume their normal daily activities.²⁶ However, the reality faced was contrary, since women began to feel that they would have difficulties to face, even during hospitalization.

Regarding the collaboration they received during the drainage stay, the women reported that their family members were the caregivers and pointed out the importance of the family in this stage of the treatment. The family is the main social network of the individual, where, it creates links and values formation.²⁷ This relationship is very interconnected and it is believed that the experience of the disease promotes changes in the way people think, feel and act.

It should also be noted that, in this study women emphasized the importance of the guidelines and the follow-up they had, and this helped them in self-care. The literature shows that the guidelines and care provided by the nurse to the patients who are in such periods have proved positive, and the lack of information and clarification regarding the disease, the treatment and the removal of the breast is responsible for the whirlwind of feelings such as fear, apprehension and concern. Thus, the preoperative visit must consist of a moment of recognition of the needs, wishes and desires felt by women. From this survey, an individualized and effective plan of care should be developed that favors the process of recovery of women.²⁸⁻⁹⁻³⁰

CONCLUSION

When considering the high percentage of women submitted to mastectomy and LA in this study, it can be concluded that the diagnosis of the disease still occurs late, which requires the use of aggressive treatments and, consequently, the appearance of related complications.

It is also worth noting, the long duration of the drainage among the women studied. This issue reinforces the importance of health education related to post-operative care. The follow-up of women undergoing surgery is important and opportunities should be created for stimulating self-care practices, providing safe and continuous information about the disease and treatments, and strengthening the bonds between the professional and the woman.

It can be observed that the occurrence of seroma and the care during the permanence of the drain are important in the planning of nursing care.

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