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## CASE REPORT ARTICLE

### PREVENTION OF VAGINAL STENOSIS AFTER BRACHYTHERAPY: NURSING INTERVENTION

#### PREVENÇÃO DA ESTENOSE VAGINAL PÓS-BRAQUITERAPIA: INTERVENÇÃO DE ENFERMAGEM

#### PREVENCIÓN DE LA ESTENOSIS VAGINAL POST-BRAQUITERAPIA: INTERVENCIÓN DE ENFERMERÍA

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#### ABSTRACT

**Objective:** to report nursing care implemented nearly a decade ago to the women undergoing a high-dose rate brachytherapy with the use of penile prosthesis to prevent vaginal stenosis in the Radiotherapy Clinic of the Oncology Research Center, Santa Catarina/Brazil. **Method:** this is a descriptive study and experience report type. The established intervention present guidelines to women to be followed during and after brachytherapy and was developed through a review study and technical and scientific improvement. **Results:** the experience has shown that many women accept the established care, others accept care with restrictions or embarrassment, but all understand the importance of vaginal dilation exercises to prevent vaginal stenosis. **Conclusion:** the shape of the prosthesis caused embarrassment or personal and family conflicts to some women. Thus, despite the higher cost, the use of vaginal dilator should be considered. **Descriptors:** Nursing Care; Cancer Cervical; Brachytherapy.

#### RESUMO

**Objetivo:** relatar o cuidado de enfermagem implementado, há quase uma década, às mulheres submetidas à braquiterapia de alta taxa de dose com o uso da prótese peniana na prevenção da estenose vaginal no Ambulatório de Radioterapia do Centro de Pesquisas Oncológicas, Santa Catarina/Brasil. **Método:** estudo descritivo, tipo relato de experiência. A intervenção instituída apresenta orientações às mulheres a serem seguidas durante e após a braquiterapia, e foi elaborada por meio de estudo de revisão e aprimoramento técnico e científico. **Resultados:** a experiência mostrou que muitas mulheres aceitam o cuidado instituído, outras aceitam com restrições ou com certo constrangimento, mas todas entendem a importância do exercício de dilatação vaginal para prevenção da estenose vaginal. **Conclusão:** para algumas mulheres, o formato da prótese gerou constrangimento ou conflitos pessoais e familiares. Assim, apesar do custo mais elevado, o uso do dilatador vaginal deve ser considerado. **Descritores:** Cuidados de Enfermagem; Câncer do Colo do Útero; Braquiterapia.

#### RESUMEN

**Objetivo:** relatar La experiencia del cuidado de enfermería implementado hace casi una década, a las mujeres sometidas a la braquiterapia de alta tasa de dosis, con el uso de la prótesis peniana para prevención de la estenosis vaginal en el Ambulatorio de Radioterapia del Centro de Pesquisas Oncológicas, Santa Catarina/Brasil. **Método:** estudio descriptivo, tipo relato de experiencia. La intervención instituída presenta orientaciones a las mujeres a ser seguidas durante y después de la braquiterapia y fue elaborada por medio de estudio de revisión y optimización técnico y científico. **Resultados:** la experiencia mostró que muchas mujeres aceptan el cuidado instituido, otras lo aceptan con restricciones o con cierta consternación, pero todas entienden la importancia del ejercicio de dilatación vaginal para prevención de la estenosis vaginal. **Conclusión:** para algunas mujeres el formato de la prótesis generó consternación o conflictos personales y familiares. Así, a pesar del costo más elevado el uso del dilatador vaginal debe ser considerado. **Descriptor:** Cuidados de Enfermería; Cáncer del Cuello del Útero; Braquiterapia.

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INTRODUCTION

The radiotherapy is a treatment commonly used for cervical cancer and other gynecological cancers, and can be used the modality of and/or brachytherapy. This therapy can cause many side effects, immediate and/or late impacts in the women’s quality of life. The side effects include skin and mucosa changes, diarrhea, urinary and sexual dysfunction, menopause and infertility. Vaginal stenosis, atrophy, decreased genital sensation, vaginal dryness, dyspareunia and post-coital bleeding are the late effects that may be experienced. Their presence can cause a great impact on intimate relationships, on the social functioning and women’s health.<sup>1-4</sup>

The vaginal stenosis caused by radiotherapy is the result of a vaginal transformation process that evolves fibrosis, decreased vaginal moisture and consequent decrease in vaginal elasticity capacity, leading to narrowing of the vaginal light, hindering the penetration during sex and gynecological examinations using speculums.<sup>2-3</sup>

It is considered that the prevention of vaginal stenosis in women with cervical cancer and other gynecological tumors, undergoing radiotherapy, is extremely important for maintaining their quality of life.

In this context, nursing plays an important role in the woman's care submitted to radiotherapy treatment. Nursing care is a practice geared to health deviations and the needs of people and their families, aiming, among other aspects, discomforts reduction, health education and quality of life, paying attention to the dimensions that constitute the human being.<sup>5</sup>

The High Dose Rate Brachytherapy (HDR-BT) is the most suitable type of remote unit for treatment of cervical cancer and other gynecological tumors.<sup>4</sup> The Oncological Research Center (CEPON), an institution specialized in oncology care in the state of *Santa Catarina*/Brazil, began the service in this therapeutic modality in 2006. The CEPON meets all women from *Santa Catarina* with gynecological tumors that need HDR-BT. In the last three years, the number of patients was 2206 women.

When the inauguration of the brachytherapy service, the CEPON team nurses established a specific nursing intervention to prevent this side effect. Therefore, this article aims to report nursing care implemented nearly a decade ago, to the women undergoing HDR-BT with the use of the

penile prosthesis in preventing vaginal stenosis.

The dissemination of this practice care is justified by adopting the same innovative features that suit the female anatomy, that is, it uses a rubber siliconised penile prosthesis. It is noteworthy that the majority of health institutions indicate the use of vaginal dilator molded on hard plastic or silicone.<sup>6</sup> The vaginal dilator has a higher cost when compared to prosthetic silicone rubber penis. Thus, the established practice could contribute to the nursing care of other oncological institutions, health care units that care for these women after completion of the therapy.

Another reason that justifies the development of this study is the latest international incidents that indicate cervical cancer in 4<sup>th</sup> place among the most incident cancers in women. In Brazil, in 2012, there were 18,503 cases of the disease, 8414. The incidence of cancers in the body of the uterus and ovaries were, respectively, 6,366 and 5,804 cases and 15,590 new cases of cervical cancer, 5,680 ovarian cancers and 5,900 bodies of the uterus were estimated for 2014.<sup>7-8</sup>

This study is also justified due to the lack of dissemination of knowledge in the nursing care area and for the need to promote sexual health of women undergoing brachytherapy to reduce physical discomfort, psychological and social harms to greater sexual satisfaction and to allow that the gynecological examination could be performed post-HDR-BT to detect the recurrence of cancer or other diseases and health needs.<sup>1-9-10</sup>

METHOD

This is a descriptive study, experience report type. It presents the search process and care definition implemented by CEPON nurses to prevent vaginal stenosis. In this context, it should be said that, first, there was the technical and scientific improvement through observation visit to the Radiotherapy Department of the National Cancer Institute (INCA) and later, the CEPON nurses, working in Radiotherapy Clinic, held a narrative review about preventive care for vaginal stenosis. At this moment, the information gathered during the visit to INCA and the recognized practice of this institution, assisted in the development of the interventions search published by other professionals and institutions.

The approach to the subject from the publications in the databases brought at first the evidence of an incipient number of

publications and the lack of standardization for the realization of post-brachytherapy vaginal physiotherapy.

One of the most important studies in the search was a *survey* conducted in an Australian oncological center. It affirms the wide variety of practices to prevent vaginal stenosis, and that intervention are often established based on inconsistent scientific evidence. It also notes that nurses are ideally placed to provide health education to patients and should recognize the importance of practical instructions supported in the written information and the use of educational video.

The care practices found in this study recommend the use of intercourse, the dilator, and vaginal lubricant. However, there is no standard concerning the beginning of the practice of vaginal dilation exercise, duration and frequency of each period, preventive treatment time.<sup>10</sup> This study indicated other studies addressing the vaginal stenosis, its identification, and preventive care. From these studies (Table 1),<sup>11-19</sup> plus the INCA experience, the nursing intervention proposal was established to prevent vaginal stenosis in women treated with HDR-BT at CEPON.

Guiding publications
Schover LR, Fife M, Gershenson DM. Sexual dysfunction and treatment for early stage cervical cancer. Cancer 1989; 63:204-12.
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Katz A, Njuguna E, Rakowsky E, Sulkes A, Sulkes J, Fenig E. Early development of vaginal shortening during radiation therapy for endometrial or cervical cancer. Int J Gynecol Cancer 2001; 11:234-5.
Khor TH, Tuan JKL, Hee SW, Tham IWK. Radical radiotherapy with high-dose-rate brachytherapy for uterine cervix cancer long-term results. Australas Radiol 2007; 51: 570-7.

Figure 1. Publications that guide the implemented nursing intervention. *Floraianópolis/Santa Catarina*. 2006.

## RESULTS

The nursing interventions established to prevent vaginal stenosis in the treatment of women in HDR-BT in Radiotherapy Clinic of CEPON, in 2006 and still in force are presented below.

Before the HDR-BT at brachytherapy planning phase, the nursing consultation is performed (the first consultation). At this first meeting, it begins the contact approach between nurse, patient/woman, and partner (if the partner is present and if the woman is interested) and begins the inter-relationship and bond process.

The objective of the development of this consultation is the data collection and physical examination (nursing history) and begins the information and health education process, including therapy (it clarifies the treatment purpose, how it will be performed, the number of sessions to be submitted), necessary care during the procedure, at home and, according to each woman, care to be carried out post-discharge therapy are gradually dialogued.

The evolution of nursing is performed at each HDR-BT session when then evaluates the woman understanding in front of the therapy and care oriented at the first visit, as well as the partner or family members that accompany them, and the emergence of new needs for care and guidance are also assessed.

At the end of brachytherapy sessions, the discharge consultation is held when the objective is an education in depth referring to vaginal therapy, sexual behavior, fears and anxieties experienced by the woman and partner before the removal from the health team.

The records of nursing consultation and nursing evolution are carried out in a specific form since 2012 effected in electronic medical records.

**The nursing interventions oriented to women during the period of HDR-BT are:**

- 1) To indicate the vaginal cream disuse;
- 2) To clarify that the sexual act can be maintained during treatment in the absence of complications, except the day before the procedure, but make it clear that such practice is not recommended during

treatment because it is necessary to avoid injuries and contaminations;

3) To guide the performance of gynecological shower twice daily with chamomile tea (two bags per half a liter of water), and to apply only when the tea is at room temperature (chamomile tea is indicated by its antiseptic action, moisturizing and anti-inflammatory);

4) To inform that may occur vaginal bleeding during and after HDR-BT, and if it happens the patient should not worry, but should inform the health team;

5) To indicate the stone breaker tea consumption, three cups a day (stone breaker tea is indicated by its diuretic action and by assisting in reducing dysuria, frequent symptoms in this clinical condition);

6) To guide the arrival to the clinic 20 minutes before of the beginning of each HDR-BT session and to bring the companion;

7) To guide cutting or scraping or shaving the pubic hair;

8) To guide women with total hysterectomy to stay 8 hours fasting (before procedure) clarifying that such care should be necessary to administer anesthesia during the procedure;

9) To guide to bring absorbent, considering that vaginal bleeding may occur;

10) To encourage and clarify the benefits of liquid intake from 2.5 to 3 liters of liquid per day;

11) To indicate healthy eating, avoiding the consumption of fried foods, alcoholic beverages;

12) To clarify that HDR-BT could change the pace of intestinal elimination and the balanced food consumption may help to prevent more frequent bowel eliminations or liquid or even constipation and in the presence of diarrhea or constipation nurse should be notified as this toxicity may require changing the type of consumed food, water intake and specific care with perianal region;

13) To guide to report anxiety, fears, insecurities and signs and symptoms experienced during the procedure or after its completion;

14) To guide that the institution has the psychologist and psychiatrist performance, and the service may be sought or requested if they are interested, or they need it;

15) To provide written information (educational folder).

**The nursing interventions oriented to women at HDR-BT discharge are:**

1) To keep the use of gynecological shower with chamomile tea once a day during the first-week post-HDR-BT. In the presence of leucorrhea, the use of gynecological shower for a longer period is indicated;

2) To maintain sexual intercourse, on average 2 to 3 times a week or perform vaginal physiotherapy with the use of a penile prosthesis with the same frequency. It is recommended that the exercise of vaginal dilation, performed with the use of penile prosthesis (12.5 x 3 cm) should be held at least twice a week for 10 to 15 minutes each time, and indefinitely. The sexual intercourse and the use of penile prosthesis can be interleaved;

3) To indicate the use of preservatives in the penile prosthesis and sexual intercourse;

4) To indicate the use of vaginal lubricant during the sexual intercourse and/or vaginal physiotherapy with penile prosthesis, indefinitely;

5) To guide hygiene and guard penile prosthesis;

6) To emphasize the importance of the return to regular sexual activity, or vaginal dilation exercise, after the HDR-BT, up to 30 days;

7) To guide reevaluation schedule with medical radiotherapist oncologist for 30 to a maximum of 50 days after the end of HDR-BT and after every three months during the first year of completion of treatment;

8) To guide the consultation appointment with gynecologist every 3 months after the evaluation of the radiotherapist after the completion of HDR-BT and consultation appointment with oncologist, they will define the follow-up frequency with the oncologist;

9) To provide written information (educational folder).

It clarifies that if a woman has a regular sexual relationship (frequency equal to or greater than that indicated for the exercise of vaginal dilation), the exercise of vaginal dilation with the use of penile prosthesis is not necessary. However, if the frequency of relations is lower than the indicated, nurses recommend during the nursing consultation, the association of sexual intercourse and the use of a penile prosthesis. For women with no fixed partners, without partners, or performing sexual intercourse without penetration, the use of penile prosthesis is indicated.

In the study context the penile prosthesis is offered to all needy women and for women with the higher socioeconomic standard the prosthesis is not donated, but its use and



acquisition are indicated. Given the need to purchase the penile prosthesis, many women demonstrated shame to go to an establishment that sells such product. To facilitate the purchase, respecting the privacy of every woman, the CEPON nurses performed a partnership with a commercial establishment, not for selling the penile prosthesis, so they could assume this responsibility, which was easily agreed by the recognition of the social need. To preserve the privacy of the woman this establishment directed a specific room of the company for storage and sale of the prosthesis (private room without identification), accessible only to women interested in the acquisition and guided by CEPON nurses. After this initiative, women began to feel more comfortable to buy the prosthesis because no one knew what they were buying when were guided to this place.

The experience of the implementation of nursing intervention for the prevention of vaginal stenosis at CEPON showed that many women accept the established care, others accept with restrictions or embarrassment, but all understand the importance of vaginal dilation exercises to prevent vaginal stenosis. The prosthesis format generated constraint or personal conflicts with their partners and family for some women. Thus, some ask the availability of vaginal dilator (not offered by the high cost). It is noteworthy that conflicts with partners are resolved after the explanations given by the nurse in the nursing consultation. However, some women report that did not use the prosthesis according to the recommended because of its shape.

Although it is reported that some women have come for HDR-BT treatment with some degree of vaginal stenosis, which requires the indication of the penile prosthesis with smaller dimensions to the standard offered by CEPON, this condition requires specific acquisition for needy women.

## DISCUSSION

The care provided was mainly different by the use of the penile prosthesis. The choice of this material was because it is made in the anatomical penis shape. Thus, adjusting the anatomy of the vagina (vaginal dilators have a cylindrical shape, that is, it has the same diameter both proximal and distal extremity) being siliconized rubber and having temperature and texture more appropriate to the vaginal canal because it can be purchased in different colors and sizes, according to the reality and likes of every woman and being easy to clean and low cost, having flexibility.

It is noteworthy that a Brazilian study found that the practice of post-brachytherapy sex was reported by only 26.4% of patients and the reasons for this low percentage are associated with the abandonment of women by partners, separation or divorce after diagnosis or cancer treatment and lack of medical care. This condition also reflects conservative cultural behavior concerning the erroneous transfer and recurrence of cancer through sexual intercourse. The findings also indicated that some women opt for abstinence, by needing to preserve the intimacy, by rejection, lack of sexual related to woman or partner characteristics practice. The woman in this condition usually expressed gratitude for having survived, trying to replace the sexual practice by other non-sexual activities, such as religious practices.<sup>2</sup>

The realities identified by the study above are added to the results of another study (review study) that states the need for adoption of psycho-education for greater adoption of the practice of vaginal exercises in preventing vaginal stenosis, rather than the unique strategy use information.<sup>7</sup> Knowing the different realities and the profile of the patients allows the most appropriate planning for implementation of nursing care.<sup>20</sup>

In this context, it is understood that the intervention proposed and implemented in CEPON has contributed to the adoption of self-care in therapeutic itinerary of woman's post-HDR-BT, because the choice of material by adjusting the anatomy of women, health education carried out with the wife and partner and nursing monitoring enable understanding of the need for health and related care. For women without partners and/or sexual activity without penile prosthesis ensures the maintenance of sexual activity and hence the control of vaginal stenosis.

It is noteworthy that the periodic use of penile or dilator prosthesis, even after the installation of the vaginal canal shortening, increases compliance and the diameter of the vagina. However, the use of dilators in the acute phase of treatment may be useless and/or can cause psychological trauma, fibrosis due to mechanical trauma, anatomical damage. Also, the benefits of its use are not evident by the significant lack of data to support or refute its use.<sup>7</sup>

In clinical practice of CEPON Radiotherapy, the benefits of vaginal dilation exercise with the use of penile prosthesis are evident, although some embarrassment reports and request the availability of vaginal dilators, or rather prosthesis without format penis. Thus,

it is considered that the intervention proposed here contributes to the control of the manifestation of vaginal stenosis for those women who follow the self-care practices targeted by the nurses and the education process used (education and in various steps and offer material education) and prepares women for self-care, but its implementation needs competent nurses to clarify the importance of their use and to maintain an open dialogue and problem-solving.

The experience of this care practice also shows a reduction of fear and pain during sexual intercourse, strengthen pelvic muscles and contribution to the quality of life of women attending the service in both the health aspect as in the sexual aspect.

Studies continue demonstrating the presence of post-HDR-BT vaginal stenosis, their consequences to the health of women affected by cervical cancer, the importance of preventive and curative care for quality of life and survival after diagnosis and treatment of cancer.<sup>21-3</sup>

## CONCLUSION

The aim of this study was the dissemination of nursing care practice established from scientific studies and clinical experience of about 10 years in the woman's care in HDR-BT brachytherapy had been reached. This dissemination considered the importance of content in the woman's care submitted to HDR-BT, the high incidence of cervical cancer and other gynecological tumors and the use of brachytherapy in their control and the lack of defined care to check the vaginal stenosis and for their preventive care.

It is believed that the intervention proposal presented here can be followed or could be as a guideline for other care practices in the various Brazilian realities, and/or other realities of the woman's care submitted to vaginal brachytherapy. However, as it is an experience report, it is recommended to carry out an observational study for the effective evaluation of the results obtained by the established intervention.

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