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EVALUATION AND CLASSIFICATION OF VAGINAL STENOSIS AFTER BRACHYTHERAPY

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ABSTRACT: This narrative review identified, in the scientific production, the methods used for evaluating and classifying vaginal stenosis in women who have undergone brachytherapy. Data collection was undertaken in July 2013 in the publications of SciELO, MEDLINE and PubMed, without time limits, and in studies cited by two scientific reviews which addressed the issue investigated here. The search protocol included the description of the method for evaluating and classifying vaginal stenosis. Comparative analysis between the findings showed there to be diversity among the methods used by different researchers. In the light of this finding, this study proposes elements for making an evaluative instrument to be applied by nurses. The standardization of the technique will help in the early detection of vaginal stenosis and in the care for women subsequent to vaginal brachytherapy.

DESCRIPTORS: Uterine cervical neoplasm. Brachytherapy. Constriction, pathologic. Nursing.

AVALIAÇÃO E CLASSIFICAÇÃO DA ESTENOSE VAGINAL PÓS-BRAQUITERAPIA

RESUMO: Revisão narrativa que identificou, na produção científica, os métodos utilizados para avaliação e classificação da estenose vaginal em mulheres pós-braquiterapia. A coleta de dados foi realizada em julho 2013 nas publicações da SciELO, MEDLINE e PubMed, sem limite de tempo, e em estudos citados por duas revisões científicas que abordam a temática aqui investigada. O protocolo de busca incluiu a descrição do método para avaliação e classificação da estenose vaginal. Análise comparativa entre os achados mostrou que há diversidade entre os métodos utilizados por diferentes pesquisadores. Diante deste achado, este estudo propõe constituintes para composição de instrumento avaliativo a ser aplicado por enfermeiros. A padronização da técnica auxiliará na detecção precoce da estenose vaginal e nos cuidados à mulher pós-braquiterapia vaginal.

DESCRIPTORIOS: Neoplasias do colo do útero. Braquiterapia. Constricção patológica. Enfermagem.

EVALUACIÓN Y CLASIFICACIÓN DE ESTENOSIS DESPUÉS DE LA BRAQUITERAPIA VAGINAL

RESUMEN: Revisión narrativa que identificó en los métodos de producción científicos utilizados para la evaluación y clasificación de las estenosis vaginal en mujeres después de braquiterapia vaginal. La recolección de datos se llevó a cabo en julio de 2013 en las publicaciones de la SciELO, Medline y PubMed, sin límite de tiempo, y estudios citados dos revisiones científicas que abordan el tema investigado aquí. El protocolo de búsqueda incluyó la descripción del método para la evaluación y clasificación de la estenosis vaginal. Análisis comparativo de los resultados mostró que existen diferencias entre los métodos utilizados por diferentes investigadores. Teniendo en cuenta este resultado, este estudio propone constituyentes para hacer un instrumento de evaluación para ser utilizado por las enfermeras. La estandarización de la técnica le ayudará en la detección precoz de la estenosis vaginal y atención a la mujer después de la braquiterapia vaginal.

DESCRIPTORIOS: Neoplasias del cuello uterino. Braquiterapia. Constricción patológica. Enfermería.

INTRODUCTION

Among the gynecological cancers, cervical cancer is an important public health problem worldwide. The most recent international incidences indicate that it is the type of cancer which is fourth-most common among women, with 527,000 new cases; and was responsible for the deaths of 265,000 women in 2012, with 87% of the deaths taking place in developing countries. Approximate survival at five years is 70%, and prevalence for five years was defined at 1,547,161 cases.¹ The International Agency of Research on Cancer published that in Brazil, in 2012, there were 18,503 cases of the disease and 8,414 deaths; and it estimated 60,498 prevalent cases for the next five years.¹

Brazil's National Cancer Institute (INCA) estimated that for 2014, one can expect 15,590 cases of cervical cancer, with an estimated risk of 15.33 cases per 100,000 women. Among the regions of Brazil, the South region has the fifth highest rate for cases of the disease, and 2,320 new cases are expected in this region, with an estimated risk of 15.87 cases per 100,000 women. In the State of Santa Catarina, 480 new cases are expected, with an estimated risk of 14.97 cases per 100,000 women.¹

The pap smear, the Papanicolaou test, was the principal strategy used in tracking programs for control of cervical cancer. For the appropriate treatment of the precursor lesions, the Brazilian guidelines recommend – after colposcopic or histological confirmation – the excisional treatment of the high grade squamous intraepithelial lesions, through exeresis of the transformation zone through electrosurgery. In the case of unsatisfactory colposcopy or when the lesion extends beyond the first centimeter of the canal, the treatment indicated is conization, which is ideally undertaken using the technique of electrosurgery.²

Among the most common treatments for cervical cancer are surgery and radiotherapy. The type of treatment depends on the staging of the disease, the size of the tumor, and personal factors, such as age and the wish to preserve fertility.³

Radiotherapy is the localized treatment which uses ionizing radiation to destroy or inhibit the growth of the neoplastic or ill cells. This therapy can be used in isolation, combined with surgery, combined with chemotherapy, or with both, as it is an effective mode of cure for many neoplasias. It can also be used exclusively, adjuvantly, curatively and palliatively.³

In radiotherapy, there are two distinct modes of treatment; tele-therapy and brachytherapy.

Tele-therapy is radiotherapy which uses ionizing radiation via external ray, which is placed at a distance from the skin varying from 1 cm to 1 m. Brachytherapy is radiotherapy treatment which uses sources of radiation applied a few centimeters from the tumor or within the tumor to be irradiated. It can be used as an exclusive therapy or in therapeutic association, depending on the volume, type and localization of the tumor. The most common therapeutic associations of brachytherapy involve external radiotherapy, surgery, chemotherapy and hormone therapy.³

Currently, in brachytherapy, the type of remote unit indicated most for treatment of cervical cancer is high dose rate brachytherapy, which, in only a few minutes, liberates high doses. This allows a reduction in exposure to the personnel involved, as well as the possibility of attending the public on an outpatient basis. In Brazil, high dose rate brachytherapy (HDRB) was incorporated into clinical practice in January 1991, when the first HDRB equipment in Latin America was installed, located in the Radiotherapy Service of the Teaching Hospital of the Faculty of Medicine of the University of São Paulo.^{4,5}

In the State of Santa Catarina, HDRB was incorporated into clinical practice in September 2006, in the outpatient unit of a State oncology institute which attends all of the women of Santa Catarina with gynecological tumors requiring brachytherapy for control of their diseases.

HDRB proposes to distribute the therapeutic dose prioritizing the points of greatest neoplastic activity, aiming, through this, for greater efficacy with a lower probability of complications. However, due to the localization of the tumor, and the consequent directing of the irradiation in the treatment, some pelvic organs affected by the irradiation may become deficient, leading to an inadequate sexual response and, consequently, to sexual dysfunction.⁶

The toxicity affecting the irradiated tissues depends on the radiosensitivity or tolerance of the tissue itself, as well as on the therapeutic scheme employed. Other factors which can influence the appearance of toxicities are the tumor volume and the dose administered, besides the facts inherent to the clinical condition of the person being treated.³ However, the occurrence of some complications resulting from this treatment may be inevitable. These include: vesical irritability, diarrhea, cutaneous changes, intestinal fistulas, vesical fistulas, and vaginal fibrosis.⁷ These changes can cause various physical and psychological effects, with negative

repercussions on the sexual health of the women and of their partners. The principal impact in these cases is attributed to vaginal stenosis, which can be associated directly with sexual dysfunction and dyspareunia.⁷⁻⁸

Vaginal stenosis results from the involvement of the vaginal mucosa, the connective tissues, and the small blood vessels, leading to epithelial denudation and reduction in the blood supply, with subsequent hypoxia and the development of teleangectasia. The tissue atrophy following the treatment with gynecological radiotherapy leads to a reduction in the thickness of the vaginal mucosa, and absence of lubrication and the formation of adhesions and fibroses, resulting in the loss of vaginal elasticity.^{7,9}

These changes are intensified by the absence or reduction of ovarian function induced by the radiotherapy, which provokes estrogen deficiency. The combination of these effects, in the long term, besides leading to sexual dysfunction, can hinder routine clinical gynecological examinations, which are indispensable in the clinical follow-up of these women.^{7,9}

As a result, it is extremely important for these women's quality-of-life to address possible sexual dysfunctions in women who have undergone brachytherapy, due to cervical cancer and other gynecological cancers.^{6,10}

In this context, nurses working in the only Brachytherapy Outpatient Center of the State of Santa Catarina reported the difficulty for evaluating and classifying post-brachytherapy vaginal stenosis, due to the absence of standardization for undertaking this.

This report adds to what was presented by two review studies, which assert the shortage and diversity of standardization for verification and classification of vaginal stenosis.^{7,9}

One literature review which classified vaginal stenosis in patients who had undergone radiotherapy concluded that further studies are necessary in order to standardize the method of evaluation for vaginal stenosis for patients who have undergone radiotherapy. It asserted the necessity of developing a method which is capable of objectively measuring the vaginal area, which would assist in the more precise diagnosis of vaginal stenosis, leading to better therapeutic proposals; and that such a definition would allow the verification of the actual impact and incidence of stenosis according to its variables, in a standardized form. Furthermore, it asserted that various methods are described for assessing vaginal

stenosis but that there is an absence of standardization and that there is inconsistency in relation to the variability of methodological rigor. As a result, these factors make the analysis of the incidence of this condition questionable, and hinder the undertaking of a detailed patient history, diagnostic confirmation and the preventive work undertaken by health professional.⁷

A survey study undertaken in 21 Oncology Centers in Australia investigated whether common practices existed in preventing vaginal stenosis.⁹ In that study, the authors indicated that few researchers define vaginal stenosis resulting from the toxicity of the brachytherapy; and that those who do so define it – and the method for assessing it – inconsistently.⁹

Considering these aspects, this study was based on the following guiding question: What are the methods used for the verification of vaginal stenosis in women who have undergone vaginal brachytherapy? The study objective was defined as: to identify, in the Brazilian and international scientific production, methods used for evaluating or classifying vaginal stenosis in women who had undergone vaginal brachytherapy.

This study is being proposed such that it may be possible to adopt a method for evaluating and classifying vaginal stenosis by nurses working in the Radiotherapy Outpatient Center of the State of Santa Catarina.

METHOD

This is a narrative review, which collected data in the publications in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE) via the Virtual Health Library (*Biblioteca Virtual da Saúde*), the Scientific Electronic Library Online (SciELO) and in the PubMed database of the US National Library of Medicine, with the following criteria: no time limit, text available for complete access online, in English, Portuguese or Spanish, with all indexes; and in the studies which make up two scientific reviews which address the issue investigated.^{7,9} These review studies were included due to their scientific quality and because they included research which is significant for this investigation.

Data collection was undertaken in July 2013. The search protocol included: the reference of the article selected, the concept of vaginal stenosis, the method for verification of the vaginal stenosis, and the method of classification of the vaginal stenosis.

For the search in the databases, the following descriptors were used: Brachytherapy and vaginal stenosis; Radiotherapy and vaginal stenosis; Uterine Cervical Neoplasms and vaginal stenosis.

The following results were obtained in the initial selection on MEDLINE: Brachytherapy and vaginal stenosis, ten articles; Radiotherapy and vaginal stenosis, 13 articles; Uterine Cervical Neoplasms and vaginal stenosis, 12 articles. In the initial selection on SciELO, the following results were obtained: Brachytherapy and vaginal stenosis, one article; Radiotherapy and vaginal stenosis, two articles; Uterine Cervical Neoplasms and vaginal stenosis, one article. In the initial selection on PubMed, the following results were obtained: Brachytherapy and vaginal stenosis, one article; Radiotherapy and vaginal stenosis, two articles; Uterine Cervical Neoplasms and vaginal stenosis, three articles. In the two review studies, 13 articles were found addressing the issue investigated here.

After checking the titles, authors and abstracts,

with the objective of ascertaining the repeated publications, availability for complete access, and the issue investigated (articles which presented the description of the technique of evaluation and classification of vaginal stenosis), 31 articles were excluded, and 12 articles were included.

It is emphasized that the evaluation of the articles included in this analysis was undertaken by peers who are experts in the area of investigation.

After the inclusion of the articles, the following was undertaken: the analytical reading of each article, the recording of the concept and method used for evaluating and classifying of the vaginal stenosis, comparative analysis between the findings, and theoretical discussion.

RESULTS AND DISCUSSION

The articles included in this study (12 articles), which present the method of evaluation and classification of vaginal stenosis are presented in Table 1.

Table 1 – Publications which present the method of evaluation and classification of vaginal stenosis by database. Florianópolis, Santa Catarina, Brazil, 2013

| References | Database |
|--|--------------------|
| Bernardo BC, Lorenzato FRB, Figueiroa JN, Kitoko PM. Disfunção sexual em pacientes com câncer do colo uterino avançado submetidas à radioterapia exclusiva. <i>Rev Bras Ginecol Obstet.</i> 2007; 29(2):85-90. ⁶ | SciELO |
| Bahng AY, Dagan A, Bruner DW, Lin LL. Determination of prognostic factors for vaginal mucosal toxicity associated with intravaginal high-dose rate brachytherapy in patients with endometrial cancer. <i>Int J Radiat Oncol Biol Phys.</i> 2012; 82(2):667-73. ¹¹ | PubMed |
| Gondi V, Bentzen SM, Sklenar KL, Dunn EF, Petereit DG, Tannehill SP, Straub M, Bradley KA. Severe late toxicities following concomitant chemoradiotherapy compared to radiotherapy alone in cervical cancer: an inter-era analysis. <i>Int J Radiat Oncol Biol Phys.</i> 2012; 84(4):973-82. ¹² | PubMed |
| Schover LR, Fife M, Gershenson DM. Sexual dysfunction and treatment for early stage cervical cancer. <i>Cancer.</i> 1989; 63(1):204-12. ¹³ | PubMed and MEDLINE |
| Brand AH, Bull CA, Cakir B. Vaginal stenosis in patients treated with radiotherapy for carcinoma of the cervix. <i>Int J Gynecol Cancer.</i> 2006; 16(1):288-3. ¹⁴ | PubMed |
| Nunns D, Williamson K, Swaney L, Davy M. The morbidity of surgery and adjuvant radiotherapy in the management of endometrial carcinoma. <i>Int J Gynecol Cancer.</i> 2000; 10(3):233-8. ¹⁵ | PubMed |
| Decruze SB, Guthrie D, Magnani R. Prevention of vaginal stenosis in patients following vaginal brachytherapy. <i>Clin Oncol.</i> 1999; 11(1):46-8. ¹⁶ | PubMed and MEDLINE |
| Flay L, Matthews JHL. The effects of radiotherapy and surgery on the sexual function of women treated for cervical cancer. <i>Int J Radiat Oncol Biol Phys.</i> 1995; 31(2):399-440. ¹⁷ | PubMed |
| Hartman P, Diddle AW. Vaginal stenosis following irradiation therapy for carcinoma of the cervix uteri. <i>Cancer.</i> 1972; 30(2):426-9. ¹⁸ | PubMed |
| Bruner DW, Lanciano R, Keegan M, Corn B, Martin E, Hanks GE. Vaginal stenosis and sexual function following intracavitary radiation for the treatment of cervical and endometrial cancer. <i>Int J Radiat Oncol Biol and Phys.</i> 1993; 27(4):825-30. ¹⁹ | PubMed |
| 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. <i>Int J Gynecol Cancer.</i> 2001; 11(3):234-5. ²⁰ | PubMed and MEDLINE |
| Khor TH, Tuan JKL, Hee SW, Tham IWK. Radical radiotherapy with high-dose-rate brachytherapy for uterine cervix cancer long-term results. <i>Australas Radiol.</i> 2007; 51(6):570-7. ²¹ | PubMed |

Evaluative method used, by study investigated

The study 'Determination of prognostic factors for vaginal mucosal toxicity associated with intravaginal high-dose rate brachytherapy in patients with endometrial cancer'¹¹ considered vaginal stenosis to be the narrowing and/or shortening of the vagina, interfering with the use of internal sanitary protection, sexual activity or physical examinations. Manifesting as vaginal dryness or dyspareunia, this has severe discomfort as a result, which was reported by the women. The method used for evaluating vaginal stenosis in this study was based on the Common Terminology Criteria for Adverse Events (CTCAE) Version 4.0 - 2009, Version 4.03 - 2010, published by the National Cancer Institute, which classifies vaginal stenosis as: Grade 1: asymptomatic, mild shortening or narrowing of the vagina; Grade 2: vaginal narrowing and/or shortening, not interfering with the undertaking of the physical examination; Grade 3: vaginal narrowing and/or shortening interfering with the use of tampons, sexual activity, or physical examination; Grade 4: unspecified; Grade 5: death.²²

The study 'Severe late toxicities following concomitant chemoradiotherapy compared to radiotherapy alone in cervical cancer: an inter-era analysis',¹² considered vaginal stenosis in the same way as the study cited above, and also used the criteria established in the Common Terminology Criteria for Adverse Events (CTCAE) Version 4.0 - 2009, Version 4.03 - 2010, in order to establish the evaluative criteria for vaginal stenosis used in the investigation.²²

The study '*Disfunção sexual em mulheres com câncer do colo uterino avançado submetidas à radioterapia exclusiva*' (Sexual dysfunction in women with advanced cervical cancer who have undergone exclusive radiotherapy),⁶ defined vaginal stenosis as narrowing of the vaginal canal to the extent that it was impossible to completely introduce the number 1 gynecological speculum through the lower extremity of the vagina for the gynecological examination (the number 1 gynecological speculum, or size 'small', is approximately 110 mm on the longitudinal axis of its articulated elements, 27 mm maximum distal width, and 24 mm greatest proximal width).⁶ The methods indicated for evaluation of vaginal stenosis found in these first three studies are described clearly, and in a way that is easy to understand and to undertake. However, there is no detailed description of the systematic stages for undertaking it.

In the study 'Sexual dysfunction and treatment for early stage cervical cancer',¹³ the classification

used was limited to the division of the stenosis into 'mild' or 'severe'; in addition to this, a questionnaire was used to be applied during the gynecological examination, in which the mucosa and the size of the vagina were classified as 'normal', 'partially changed' or 'severely changed', and the pain during palpation was considered as 'mild discomfort', 'severe', or 'absent'. It was observed in this classification that the description of the technique used does not mention technical or objective detail allowing the classification of the characteristics evaluated.

The study 'Vaginal stenosis in patients treated with radiotherapy for carcinoma of the cervix',¹⁴ classified the compromising of the vaginal canal in various grades: absence of stenosis - grade 1, partial stenosis - grade 2 and total obliteration - grade 3; in addition to this, the authors also considered the presence of severe complications associated with the tissue changes caused by the radiotherapy, such as ulcers and necrosis - grade 4, and vesical and intestinal fistulas - grade 5. It was observed that in this method there are no criteria for defining stenosis of grades 1 and 2, but that grades 3 and 4 are easily identified.

In the study 'The morbidity of surgery and adjuvant radiotherapy in the management of endometrial carcinoma',¹⁵ the presence of vaginal stenosis in the clinical examination was characterized by the inability to introduce two fingers into the vaginal canal, this test being undertaken by two examiners. The technical description in this study is easy to understand and undertake. It is emphasized that the literature indicates that the vagina is highly distensible and generally allows the introduction of two fingers for the internal examination, thus confirming that described by the authors.²³

In the study 'Prevention of vaginal stenosis in patients following vaginal brachytherapy',¹⁶ the presence or absence of vaginal stenosis was identified through the gynecological examination which compared the vaginal dimension before and one year after the conclusion of the intracavitary treatment. It is emphasized that small anatomical changes can occur in women, principally with advancing age; however, these manifestations may not compromise the woman's sex life and sexual health, that is to say, small changes may not represent vaginal stenosis.

The study 'The effects of radiotherapy and surgery on the sexual function of women treated for cervical cancer'¹⁷ defines vaginal stenosis as the shortening of the vagina, with a value below 8 cm in length. However, the authors do not present, in the study's method, the technique for evaluating

the vaginal stenosis – they merely relate the signs reported by the women to the results found in the gynecological examination. The results in this study show that one third of the women included in the study (five women) experienced a sensation of shortening and narrowing of the vagina and that these women, in the physical examination, had a vaginal length inferior to eight centimeters. It is emphasized that anatomical studies describe that the mean calculated for the length of the vagina is from 7 to 9 centimeters and the width, from three to four cm.²³ This being the case, the length of 8 cm may be considered normal length, or within the mean expected.

In the study 'Vaginal stenosis following irradiation therapy for carcinoma of the cervix uteri',¹⁸ the classification of the vaginal stenosis was also established in grades; however, the authors limited themselves to the possible obliteration of the vaginal canal in its length, with grade 1 being absence of stenosis; grade 2 being the stenosis in the first proximal third of the vagina, and grade 3, the stenosis beyond the first third of the vagina, up to total obliteration. Thus, this method does not objectively define how to evaluate the degrees of the stenosis.

The study 'Vaginal stenosis and sexual function following intracavitary radiation for the treatment of cervical and endometrial cancer'¹⁹ classified vaginal stenosis as vaginal length inferior to the normal 8 – 9 cm. This technique has already been presented above. The study reasserts that the length of the vagina can oscillate between 7 to 9 cm.²³

In the study 'Early development of vaginal shortening during radiation therapy for endometrial or cervical cancer',²⁰ vaginal stenosis was evaluated through comparison and measuring of the difference between the distance from the superior edge of the pubis and the apex of a cylinder introduced into the vagina. For this evaluation, a radiological examination was used, which was undertaken prior to the treatment and after the second application of brachytherapy. However, vaginal stenosis, in general, is manifested at a late stage¹¹ and the requesting of the radiological examination may limit the action of the nurse, as the prescription of the same is linked to the practice of medicine.

The study Radical radiotherapy with high-dose-rate brachytherapy for uterine cervix cancer - long-term results²¹ classified vaginal stenosis as severe (grade 1) or moderate (grade 2); however, the way this evaluation was undertaken, and the criteria used, were not described.

Comparing the findings, it was observed that

there is diversity in evaluative and classificatory methods for vaginal stenosis, as well as a lack of standardization for the undertaking of the same. This reaffirms what was evidenced by the review studies: *Métodos avaliativos para estenose vaginal pós-radioterapia* (Evaluative methods for post-radiotherapy vaginal stenosis)⁷ and 'Preventing vaginal stenosis after brachytherapy for gynaecological cancer: an overview of Australian practices',⁹ cited in the introduction of this article.

One review study published in 2012 also asserts that studies which evaluate post-brachytherapy vaginal toxicity and its determining clinical factors are rare.¹¹

In the light of these results, general constituting elements were organized for the elaboration of an instrument for the evaluation and classification of vaginal stenosis, to be applied by nurses working in the context of care for the woman who has undergone vaginal brachytherapy, based on the professional experience of this study's authors, and of the studies included in this research.

The defining of the evaluative and classificatory methods of vaginal stenosis could minimize risks and increase the safety and quality of life of the women, and also meet the professional needs.

General constituting elements for the composition of an instrument for evaluating and classifying vaginal stenosis

The data collection indicated for the nurse's interview must investigate the patient's questions and the discomfort that she experiences; the frequency of sexual relations; the frequency of undertaking vaginal physiotherapy; the presence of difficulties for undertaking vaginal physiotherapy for maintaining sexual relations; the presence of pain in the vagina and its intensity and characteristics; the undertaking of the gynecological examination after terminating brachytherapy; the presence of difficulties for undertaking the gynecological examination; the need for the use of vaginal lubricant and the presence of vaginal bleeding and/or secretion.

The data collection indicated for the gynecological examination must follow the technical recommendations for this purpose;²⁴ whether the exam was undertaken, the size of the speculum used, and characteristics of the vaginal canal and of the cervix; and reasons which could have impeded the undertaking of the gynecological examination must be recorded; if indicated, the pap smear must be undertaken and recorded. If it is not possible to

undertake the gynecological examination, that is to say, if the presence of ulcers, necrosis, or fistulas in the vaginal canal should be identified, the patient must be referred for medical evaluation. Finally, the nurse must record the decision-making, that is, the nursing interventions undertaken.

For classification of the vaginal stenosis, the following classification is proposed: Grade 0: asymptomatic woman; Grade 1: the woman who mentions some vaginal change or discomfort, but which does not impede the use of internal sanitary protection, sexual activity or the gynecological examination; Grade 2: a woman who presents vaginal shortening that partially interferes in the use of tampons, sexual activity and in the undertaking of the gynecological examination; Grade 3: a woman who presents total constriction of the vagina, identified in the visual inspection during the undertaking of the gynecological examination, and that makes it impossible to undertake the gynecological examination or sexual activity; Grade 4: the woman presents ulcers or necrosis in the vaginal canal; Grade 5: the woman presents vesical and/or intestinal fistulas.

Vaginal stenosis induced by radiation can be prevented by the undertaking of vaginal physiotherapy or by maintaining sexual relations as advised during the nursing consultation, before and during the undertaking of HDRB.

Women who were only advised regarding the importance of sexual relations present a greater incidence of vaginal stenosis when compared with women who undertook vaginal physiotherapy,⁹ thus evidencing the importance of this resource for the preventive intervention.

However, the choices of each woman and the responses of the organism can be diverse. It falls, therefore, to the nurses and doctors to evaluate the presence or absence of vaginal stenosis to maintain the preventive care, but also the interventions in the light of the complications which may be manifested. For this to happen, the definition of the evaluative method guides the professional to identifying the possible physiological changes and also serves as guidance for defining the necessary interventions.

CONCLUSION

Considering the magnitude of cervical cancer, the importance of women's health and the need for evaluation of the nursing care given to women during HDRB, one can assert the relevance of this research and the construction of the knowledge produced.

In the identification of the methods used for the verification of vaginal stenosis in women following vaginal brachytherapy, the findings were diverse and divergent. This finding is similar to that of other studies which assert the inconsistency of the criteria for verification of vaginal stenosis. The differences found support the elaboration of a guidance instrument to be applied by nurses.

The establishing of a specific instrument for nurses standardizes the technique for verification of vaginal stenosis, contributes to the evaluation of the nursing care provided, and assists in the care to be instituted for self-care with or without the presence of vaginal stenosis in women post-HDRB. The instrument will be validated by a subsequent study by judges who are experts in the area in question.

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