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RESEARCH

Assistência de enfermagem a pacientes com câncer de cabeça e pescoço submetidos à radioterapia

Nursing care to patients with head and neck cancer undergoing radiotherapy

Atención de enfermería a pacientes con cáncer de cabeza y cuello sometidos a radioterapia

Cândida Caniçali Primo ¹, Flavia Dias Cesar ², Eliane de Fátima Almeida Lima ³, Renato Alves Caniçali ⁴, Franciéle Marabotti Costa Leite ⁵

ABSTRACT

Objective: developing the main diagnoses and nursing interventions related to complications of radiotherapy in patients with head and neck cancer. **Method:** a descriptive study developed in three stages: literature review in the databases MEDLINE and LILACS; identification of complications reported at least in 50% of the articles, which were xerostomia and mucositis and composition of diagnoses and nursing interventions according to the International Classification for Nursing Practice. **Results:** there were formulated the diagnoses: “Low Salivation” and “Inflammation of the Oral Mucous Membrane” and 40 nursing interventions. **Conclusion:** this study contributed in the organization of nursing care through the use of a standardized terminology for diagnoses and nursing interventions that support the nursing consultation in the sector of radiotherapy. **Descriptors:** Head and neck neoplasms, Radiotherapy, Nursing process, Nursing diagnosis, Classification.

RESUMO

Objetivo: elaborar os principais diagnósticos e as intervenções de enfermagem relacionados às complicações da radioterapia em pacientes com câncer de cabeça e pescoço. **Método:** estudo descritivo desenvolvido em três etapas: revisão da literatura nas bases de dados MEDLINE e LILACS; identificação das complicações citadas, no mínimo, em 50% dos artigos, as quais foram xerostomia e mucosite e composição dos diagnósticos e intervenções de enfermagem de acordo com a Classificação Internacional para a Prática de Enfermagem. **Resultados:** foram formulados os diagnósticos “Salivação diminuída” e “Inflamação da membrana mucosa oral” e 40 intervenções de enfermagem. **Conclusão:** esse estudo contribuiu na organização da assistência de enfermagem através do uso de uma terminologia uniformizada para diagnósticos e intervenções de enfermagem que embasam a consulta de enfermagem no setor de radioterapia. **Descritores:** Neoplasias de cabeça e pescoço, Radioterapia; Processos de enfermagem, Diagnóstico de enfermagem, Classificação.

RESUMEN

Objetivo: desarrollar los principales diagnósticos e intervenciones de enfermería relacionados con complicaciones de la radioterapia en pacientes con cáncer de cabeza y cuello. **Método:** se trata de un estudio descriptivo, desarrollado en tres etapas: la revisión de la literatura en las bases de datos MEDLINE y LILACS; la identificación de las complicaciones informadas de al menos el 50% de los artículos, que eran la xerostomia y mucositis y la composición de los diagnósticos y las intervenciones de enfermería de acuerdo con la Clasificación Internacional para la Práctica de Enfermería. **Resultados:** se formularon los diagnósticos: “Disminución de la salivación” y “La inflamación de la membrana mucosa bucal” y 40 intervenciones de enfermería. **Conclusión:** este estudio contribuyó en la organización de la atención de enfermería a través de la utilización de una terminología estandarizada para diagnósticos e intervenciones de enfermería que apoyan la consulta de enfermería en el sector de la radioterapia. **Descriptor:** Neoplasias de cabeza y cuello, Radioterapia, Procesos de enfermería, Diagnóstico de enfermería, Clasificación.

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INTRODUCTION

The head and neck cancer is considered one of the main tumors affecting people in Brazil and around the world due to its important incidence, prevalence and mortality. The term "head and neck cancer" applies to tumors that occur in the upper aerodigestive tract, including the oral cavity, larynx and pharynx, and its epithelium responsible for most cancers and, in particular, of squamous cell carcinoma, which is the most common form.¹

Among head and neck cancers, the most common are the oral cavity and larynx; and smoking and alcohol consumption are the main risk factors for its appearance, a fact that makes it more challenging treatment due to the significant risk of comorbidity and developing second primary cancers of this population.²

Radiation therapy for decades is a pillar in the treatment of head and neck cancers. The advancement of technology in recent years has increased radiation dose with larger volumes of healthy tissue spared; however the beginning of complications is almost inevitable. Radiotherapy is administered for a period of time that allows healthy tissue to recover between sessions, the return of the cells to the radiosensitive phase of the cell cycle and reoxygenation of resistant tumor cells.³

During radiotherapy, the patient may be affected by feelings of distress and helplessness, in addition to possible aforementioned complications, which is indispensable the role of nurses in performing nursing consultations, which is based on orientation, prevention, treatment and rehabilitation to throughout the patient's stay in the radiotherapy Department through education to patients and families⁴, which recognize the competence of the nurse after going through nursing consultation, this becoming professional reference in the radiotherapy sector.⁵

As a result of high demand for nursing care of these patients, conduct a study aimed at this clientele will give subsidies to improve the quality of provided nursing care, as well as its record. To organize and systematize nursing care is the use of a methodological tool, the nursing process, which under Resolution 358/2009 of the Federal Nursing Council is organized in five steps interrelated, interdependent and applicants, who are: data collection (or history), diagnosis, planning, implementation and evaluation.⁶

The nursing process provides that nursing care is based on an evaluation of the patient, in order to provide data to make appropriate decisions about what the patients' care needs, ie the nursing diagnoses, as well as interventions and results. Nursing has various grading systems related phases of the nursing process, among the best known and applied are NANDA

Taxonomy Diagnostics (North American Nursing Association); the Classification of Nursing Interventions (NIC); Nursing Outcomes Classification (NOC) and the International Classification for Nursing Practice (ICNP®).⁷

The ICNP® is a standardized language system, broad and complex, representing the field of practical nursing at the global level, because since 2008 has been approved for inclusion in the International Classifications Family World Health Organization. This terminology facilitates documentation patient nursing care and this information can be used for planning and managing nursing actions.⁸

Thus, this study aimed to developing the main diagnoses and nursing interventions related to complications of radiotherapy in patients with head and neck cancer.

METHOD

It is a descriptive exploratory study developed in two stages, being a literature review conducted in the databases: Latin American and Caribbean Health Sciences (LILACS) and Medical Literature Analysis and Retrieval Sistem Online (MEDLINE), with the descriptors "head and neck cancer", "radiation", "complications" and "nursing care" and used the guiding question: "What are the complications of radiotherapy in patients with head and neck cancer?"

Inclusion criteria were: full text articles available in the databases searched in Portuguese and Spanish, published from 2004 to 2013. The search was through online access, and the final sample consisted of 34 articles. After reading the full text of articles, the complications that have been cited at least 50% of the final sample items were used for the establishment of nursing diagnoses, the second stage of the study.

It was elaborated nursing diagnoses using the terms of the seven axes of ICNP® Model, based on the directives: include, necessarily, a term the focus shaft and a term of Judgment axis and include additional terms of other axes, according to the need. For the construction of nursing interventions, the guidelines are: to include a compulsory term Action shaft and a term target, which may be a term of any of the axes except the Judgement axis⁹.

RESULTS AND DISCUSSION

Through literature review 34 articles were selected, in which 25 were described radiotherapy complications. Most publications was in dentistry, is scarce in nursing, an alarming fact considering the demand for nursing care to these patients.

Therefore, it chose to describe and elaborate diagnoses and interventions for complications that were cited by 50% or more articles, which were xerostomia and mucositis, cited in 70,6% and 61,8% articles, respectively. Follows in Table 1 elaborate diagnostics.

	Complications	
	Xerostomia	Mucositis
Affirmative diagnosis	Decreased salivation	Inflammation of the oral mucosa membrane

Table 1 - Major nursing diagnoses of patients with head and neck cancer undergoing radiotherapy, according to ICNP®.

Xerostomia is the first and most common effect that affects the patient undergoing radiotherapy for head and neck region. In ICNP®, dry mouth could be worked with the diagnosis of decreased salivation, which agrees with the signs and symptoms presented by patients who manifest this complication.⁹

Xerostomia is caused by exposure to radiation of the salivary glands, mainly the parotid glands, which produce approximately 50% of the total amount of saliva. The secretion it produces has more water, compared ace submandibular and sublingual glands, which have more mucinous secretion. Thus, lesions of the parotid result in dense, viscous saliva, characteristic of xerostomia due to the total failure of the serous portion of the salivary gland, more sensitive to radiation.^{3, 10-15}

Changes in the quality and composition of saliva causes nocturnal oral discomfort, dysphagia, dysphasia, greater sensitivity to oral infections and tooth decay; changes in taste; mucosa dry, erythematous and painful; burning sensation on the tongue, cracks and ulcers in the soft tissues; fungal infections and halitosis.¹²⁻¹⁶

These changes are related to the dosage and duration of radiation that induce inflammatory and degenerative reactions in the acinar cells of the ducts of the salivary glands, causing changes in its composition and function, leading to increased risk of caries development and infections mucosa due to saliva protective role on the oral mucosa against bacterial and fungal infections, exerted under normal conditions^{12-13,15}. A study of patients undergoing radiotherapy in the head and neck showed that 75,5% developed xerostomia.¹¹

Faced with these diagnoses, we elaborated the nursing interventions that are aimed both to prevent and to treat these complications of radiation therapy, described in Tables 2 and 3.

Nursing interventions for decreased Salivation
Explain to the patient what decreased salivation is
Explain the causes of decreased salivation
Explain the possible complications of decreased salivation
Encourage fluid intake often
Encourage fluid intake before sleeping
Encourage use of chewing gum without sugar
Encourage use of artificial saliva in gel before meals and before sleeping
Forward to dental evaluation of laser in oral cavity
Instill water with a few drops of lemon on the oral mucous membrane
Motivate oral cavity hygiene
Keep lips lubricated
Promote food intake pastes
Promote eating cold foods
Avoid eating hard and dry foods
Assess the patient's nutrition
Listen to the complaints of the patient with attention
Evaluate the oral cavity for signs of candidiasis
Forward for dental assessment because of the risk of tooth decay
Lifestyle prevention of social isolation

Table 2 - Nursing interventions for diagnosis decreased Salivation, according to ICNP®.

Nursing interventions for Inflammation oral mucous membrane
Explain to the patient what inflammation of the oral mucosa membrane is
Explain the causes of inflammation of the oral mucosa membrane
Explain the possible complications of oral mucous membrane inflammation
Demonstrate how to brush your teeth, tongue, oral mucosa and gums indicating extra soft tooth brush and toothpaste with neutral pH
Motivate oral hygiene of the oral cavity
Avoid mouthwash containing alcohol in the composition
Keep the lips lubricated
Examine the oral cavity once a week
Encourage fluid intake often
Promote food intake pastes and liquids
Avoid eating hard foods, spicy food, acids or hot
Avoid hot or acidic liquid intake
Administer analgesics as prescription
Forward to dental job evaluation of laser in oral cavity
Assess the level of inflammation as oral toxicity range of the World Health Organization
Assess the patient's nutrition
Listen to the complaints of the patient with attention
Monitoring of blood glucose in diabetic patients
Gargle with chamomile tea
Gargle with baking soda
Gargle with chlorhexidine gluconate

Table 3 - Nursing interventions for diagnosing Inflammation oral mucous membrane, according to ICNP®.

In xerostomia interventions are aimed mainly for the stimulation of salivary secretion and humidifying the mucosa, such as the use of chewing gum by mechanical stimulation and the use of water with a few drops of lemon cited as an alternative to make the moist mucous membrane; however, long term acidity can cause erosive lesions in teeth. The lip fissures may obtain improvement by using lip lubricant four times daily in the case of drying. The artificial saliva of the mouth maintain the pH between 6.0 and 7.0 and its compositions can be a major constituent of tooth remineralization.^{11,17} Meanwhile, the low power laser has been described as capable of reducing the incidence of xerostomia due to the ability to stimulate the production of saliva.¹⁸

The importance of promoting oral hygiene are, among others, in the prevention of tooth decay since the decreased salivation is a risk factor for its appearance.¹⁹ Additionally, the accumulation of plaque caused by poor oral hygiene cause halitosis and increases the severity of mucosal infections, significant event since the presence of uncontrolled infection becomes a limiting factor to the success of the therapy^{3,12}. Therefore, the oral cavity should be examined for the presence of candidiasis signals, because of the relationship between xerostomia and fungal growth caused by it.^{13,20}

The liquid and pasty diet intake provides better training of the bolus to contain more water, minimizing dry mouth, and one should always be careful to avoid excess sugar, due to the increased risk of caries. Because of the dryness of the mouth, it is important in the same way avoid hard and dry foods because they contain less water.^{10,17,21-22} The fluid intake is often essential due to the important dry mouth, which impairs speech and chewing. Likewise, the fluid intake before going to bed should be encouraged due to the collapse of the mucous membranes during sleep, which causes discomfort and sleep disruption to water intake.^{3,16}

Dysphagia and difficulty chewing can cause the patient to provide dietary changes, it is imperative to carry out the nutritional assessment by the nurse through physical measurements, such as body mass index and waist circumference, as well as the evaluation of biochemical and clinical data and food, as the optimal nutrition is an essential factor in promoting recovery and resistance to infections and other complications.¹⁹

Patients who develop decreased salivation due to difficulty speaking, in feeding and halitosis caused by oral dryness tend to isolate themselves, leaving the social life and influencing negatively on their well-being and quality of life due necessary habits change, as the limitation to eating solid food and even the difficulty to feed in public.²²

Besides the development of xerostomia and mucositis usually manifests itself starting from the second week of radiation therapy, it is characterized by destruction of epithelial cells without replacement by new cells.²³ Mucositis can be worked through in ICNP® diagnosis Inflammation of the oral mucous membrane.

In the inflammation of blood vessels become more permeable, causing mucosal edema leading to reduced blood supply.¹² The diagnosis is made by oral assessment by nurse with the help of tongue depressor and flashlight, where the main signs and symptoms are found sensitivity, erythema and ulceration, which vary according to the level of mucositis.¹⁹

The pathophysiology of mucositis comprises four phases, which are: inflammatory phase / vascular, epithelial phase; an ulcerative/bacteriological phase and repair phase, which is the repair of the damaged tissue.^{3,12-14}

Mucositis affect the nutrition and hydration due to difficulty in chewing and swallowing, and speech and is considered one of the most debilitating acute reactions of treatment. Persistence in trouble feeding can induce weight loss, anorexia, cachexia and dehydration. Also mucositis they are attributed to sleep disturbances and even depression.^{15,20}

In a study conducted with patients undergoing radiotherapy in the head and neck region, 16,12% had treatment temporarily interrupted due to the severity of mucositis.²⁴ In another study, it was found that 79,4% of irradiated patients in neck-facial areas developed mucositis, which was also shown that xerostomic board was directly linked to the presence of this complication.²⁵

It is the role of nurses who work in the radiotherapy sector that since the first consultation with patients irradiated in the head and neck is performed the evaluation of the oral cavity making the diagnosis and intervening if necessary. The therapeutic approach is facilitated with the use of oral toxicity scale established by the World Health Organization, which classifies mucositis into five grades, making possible a more practical definition of treatment, intensity of care and the most appropriate intervention, according to the displayed level.²⁶

The diabetic patients show significant increase in the severity of mucositis, occurs due to the fact that impaired wound healing resulting from rapid degradation of collagen. Therefore, diabetic patients should be monitored more closely during treatment with specific guidance and care, especially in glucose control and should nurses be aware of these parameters.²³

Oral hygiene should be done with toothbrush soft bristle because it minimizes the trauma, along with non-abrasive toothpaste after meals and before sleeping; The floss should be used every 24 hours, unless painful or platelet count is below $40.000/\text{mm}^3$ of blood.²¹ The completion of oral hygiene was an important factor in a study showing that in patients oriented in relation to oral health who improved hygiene, reduction in the severity of mucositis.²⁴ The use of mouthwash containing alcohol should be avoided due to the dryness caused by the same and the consequent enhancement of rupture of the oral cavity tissue.²⁶

The rinse with chamomile tea can have positive results in reducing the severity of mucositis due to its anti-inflammatory properties, as demonstrated in a study of patients who had mild mucositis to rinse their mouths with this substance^{20,26}. The mouthwashes containing chlorhexidine gluconate must be prescribed with the substance concentration of 0,12% without dilution, twice daily for one minute at intervals of 12 hours between applications. Chlorhexidine has been shown to reduce the frequency of episodes of pain and decrease the severity of mucositis.^{12,26} The mouthwash performed with sodium bicarbonate is used due to the change caused by it in the pH of the oral cavity, making it less conducive to the growth of pathogenic microorganisms, also aids in debridement of lesions, reduced odor and saliva fluidisation.³

As with xerostomia, the low power laser in use is indicated by mucositis stimulate cellular activity and accelerate the healing process due in part to reduced acute

inflammation, resulting in a faster tissue repair. Should apply lip lubricant to promote greater patient comfort.^{17-18,27} Study found that laser therapy also significantly reduced pain, severity and duration of symptoms of mucositis in cancer patients.²⁸

The assessment of nutritional status is important because of the limitations caused by mucositis affecting the food, such as dysphagia, leading to secondary problems such as loss of weight, loss of appetite, anorexia and dehydration, it is important the recommendation to the patient in increasing the the fluid intake.¹¹ Pasty or liquid diet can easily digestible food intake, while the hard, spicy, acidic and hot, as liquids having these properties should be avoided as they can cause local trauma²⁶. Study recommends that the individualized and early dietary advice by a dietician produce clinically significant effects in terms of reduction of weight loss and malnutrition compared to the standard nutritional care in patients with head and neck cancer receiving radiation therapy.²⁹

The nursing interventions in complications that are related to patient education are designed to reduce stress and improve coping in relation to complications he experienced, changing his perception, so that what might be considered a threat is perceived as more beneficial.²⁶

Social support also facilitates the coping behaviors of the patient. People who feel lonely and isolated are at higher risk of treatment failure. Even if that person has relationships and interact with others, the relationship with level of concern and deeper involvement is the support that this patient needs, it is important to listen to that individual, where he will express his feelings openly and have the feeling load sharing enabling greater control of the situation.

Finally, in addition to technical competence requires that the nurse has sensitivity to capture customer needs and the use of a standardized language system worldwide as the ICNP[®] favoring the systematization of records, giving visibility to the work of nurses and also the ICNP[®] to be an information technology contributes to the collection, storage and analysis of clinical data that can be applied to the nursing care management; in obtaining financing; and in proposing health policies and nursing education.⁸

CONCLUSION

This study allowed, through scientific literature review, to identify the main side effects of radiotherapy and thus prepare the diagnostic statements and interventions for patients with head and neck cancer undergoing radiotherapy. They were formulated using the ICNP® two diagnoses: decreased salivation and inflammation of the oral mucous membrane and 40 nursing interventions.

The contributions of this study can be viewed in care, teaching and nursing research, regarding the organization of nursing care through the use of a standardized terminology for diagnostics and nursing interventions that support the nursing consultation in the radiotherapy sector, besides allowing select appropriate nursing actions to the specific needs arising from complications of radiotherapy.

Regarding nursing education, enables more effective linkage between assistance and education to facilitate the understanding of scholars about the relationship between diagnoses, results and nursing interventions.

Regarding the nursing research, it serves as a stimulus for the development of new studies aimed at validating these diagnoses and interventions aimed at patients on radiotherapy, especially considering the specific demand for nursing care that these clients present.

It is worth mentioning that the nursing care based on nursing theories, the systematic development of the nursing consultation and structuring of health services enable the autonomy of the nurse and the visibility of his work across the multi-professional team and clientele.

Finally, the application of the nursing process favors the clinical reasoning of nurses and provides a means for identifying diagnostic and carrying out interventions that address the overall health of the client and thus contribute to the quality of care

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