

The Nutritional Approach Challenge of a Patient with Colon Cancer and Leptomeningeal Metastasis in Clinical Practice: Case Report

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O Desafio da Abordagem Nutricional de uma Paciente com Câncer de Cólon e Metástase Leptomeningea na Prática Clínica: Relato de Caso

El Reto de la Abordaje Nutricional de una Paciente con Cáncer de Colon y Metástasis Leptomeningeas em la Prática Clínica: Relato de Caso

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ABSTRACT

Introduction: Leptomeningeal metastasis is an extremely rare evolution of colon cancer, with reduced survival, requiring early palliative treatment in order to improve the patient's quality of life. The aim of this study was to report the case of a patient with colon cancer with leptomeningeal carcinomatosis, from the perspective of the nutritional approach in exclusive palliative care. **Case report:** Young female patient with diagnosis of colon cancer, metastatic to leptomeninges, admitted to a Palliative Care Unit, with reduced functionality and nutritional risk. From the 1st to the 8th day of hospitalization, she remained on zero diet. In the few moments when she was more alert, there was an attempt to offer liquid oral diet, which could not be achieved due to high risk of bronchoaspiration. After multiprofessional team discussions and conversations with the patient's family members, it was decided to place the nasogastric catheter (NEC). The patient alternated periods on zero diet and nutrition by NEC according to clinical and nutritional conditions. **Conclusion:** It is necessary to reconcile a safe food route for quality of life and death, considering not only the patient, but the feelings and meanings the family members attribute to food.

Key words: Colonic Neoplasms; Meningeal Carcinomatosis; Palliative Care; Nutritional Status.

RESUMO

Introdução: A metástase leptomeningea é uma evolução extremamente rara do câncer de cólon, com sobrevida reduzida, demandando tratamento paliativo precoce no intuito de melhorar a qualidade de vida do paciente. O objetivo deste estudo foi relatar o caso de uma paciente com câncer de cólon com carcinomatose leptomeningea, sob a perspectiva da abordagem nutricional em cuidados paliativos exclusivos. **Relato do caso:** Paciente jovem, sexo feminino, com diagnóstico de câncer de cólon, metastático para leptomeninge de rara evolução, admitida na Unidade de Cuidados Paliativos, com funcionalidade reduzida e risco nutricional. Do 1º ao 8º dia de internação, manteve dieta zero. Nos poucos momentos em que esteve mais alerta, houve uma tentativa de oferta de dieta via oral líquida, o que não pôde ser alcançado em virtude do alto risco de broncoaspiração. Após discussões entre a equipe multiprofissional e conversas com familiares da paciente, optou-se pela colocação do cateter nasogástrico (CNE). A paciente alternava períodos de dieta zero e nutrição pela CNE de acordo com suas condições clínicas e nutricionais. **Conclusão:** É necessário conciliar uma via alimentar segura para qualidade de vida e de morte, contemplando não somente o paciente, como também os sentidos e significados atribuídos à alimentação por seus familiares.

Palavras-chave: Neoplasias do Colo; Carcinomatose Meningea; Cuidados Paliativos; Estado Nutricional.

RESUMEN

Introducción: La metástasis leptomeningea es una evolución extremadamente rara del cáncer de colon, con supervivencia reducida, requiriendo tratamiento paliativo precoz para mejorar la calidad de vida del paciente. El objetivo de este estudio fue reportar el caso de una paciente con cáncer de colon con carcinomatosis leptomeningea, desde la perspectiva del abordaje nutricional en cuidados paliativos exclusivos. **Relato del caso:** Paciente joven con diagnóstico de cáncer de colon, metastático a leptomeninge, ingresado en una Unidad de Cuidados Paliativos, con funcionalidad y riesgo nutricional reducidos. Desde el 1º al 8º día de hospitalización, permaneció con dieta cero. En los pocos momentos en que estuvo alerta, se intentó ofrecer dieta líquida oral, lo que no se pudo lograr por alto riesgo de broncoaspiración. Luego de discusiones entre el equipo multiprofesional y conversaciones con familiares del paciente, se decidió colocar el catéter nasogástrico (CNE). El paciente alternó períodos de dieta cero y nutrición por CNE de acuerdo con sus condiciones clínicas y nutricionales. **Conclusión:** Es necesario conciliar una ruta alimentaria segura para la calidad de vida y la muerte, contemplando no solo al paciente, sino también los sentidos y significados atribuidos a la alimentación por sus familiares.

Palabras clave: Neoplasias del Colon; Carcinomatosis Meningea; Cuidados Paliativos; Estado Nutricional.

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INTRODUCTION

Colon cancer is the second most common type in the world, it usually affects older adults, and the most common metastases occur in the liver, lung and peritoneum¹. However, the rate of younger individuals diagnosed with this neoplasm even at an advanced stage has been increasing, as well as mortality in this age group². Leptomeningeal metastasis is a rare disease progression, with incidence of less than 1% in colon cancer and mean survival of seven weeks, requiring early palliation³.

Changes in nutritional status are frequent in patients with advanced cancer, a context in which nutritional assistance is necessary and must consider the prognosis, the nutritional status, in addition to the biopsychosocial and ethical aspects involved⁴. Ensuring adequate nutrition in a chronic, debilitating and care-dependent condition is a challenge for which a multifaceted approach, aimed at the patient and the caregiver, needs to be carried out. Awareness, information, and implementation are the relevant principles on which the planning of nutritional assistance must be structured⁵.

To the best of the current knowledge, there are no studies on the nutritional approach of patients with leptomeningeal metastatic colon cancer. Thus, the objective was to report the case of a patient with leptomeningeal metastatic colon cancer focused to aspects of the nutritional approach during exclusive palliative care.

CASE REPORT

The project was previously approved by INCA Institutional Review Board (35013520.6.0000.5274). As the patient has already died, no Informed Consent Form was required.

HISTORY OF THE DISEASE

A 36-year-old Brazilian woman with no pre-existing comorbidities, former smoker, presented intestinal obstruction and underwent a left colectomy, omentectomy and appendectomy in a municipal general hospital in Rio de Janeiro in September 2018, whose histopathology of the surgical specimen showed adenocarcinoma. In December of the same year, she was referred to Cancer Hospital (CH) I of the National Cancer Institute José Alencar Gomes da Silva (INCA), where a signet-ring cell adenocarcinoma was confirmed, with perineural and lymph node infiltration. 6 months of adjuvant chemotherapy with Capecitabine and Oxaliplatin was proposed in 4 cycles (it was interrupted in the 2nd cycle due to toxicity). The chemotherapy was then changed to

Folinic acid, Fluorouracil and Oxaliplatin, in 8 cycles, completed in April 2019.

As side effects of all antineoplastic treatment, there was the development of diabetes mellitus, grade 1 mucositis, grade 1 asthenia and grade 2 diarrhea, but as the patient maintained her functionality, it was possible to complete the proposed treatments. It is noteworthy that due to these complications, at various times it was necessary to change the consistency and nutritional characteristics of the diet in order to promote symptom control.

The patient was hospitalized because of uncontrolled diabetes mellitus in April 2019. She was classified as well-nourished through the Patient-Generated Subjective Global Assessment, (final score of two points; classification A)⁶. The body weight and height recorded were, respectively, 81.5 kg and 1.68 m, and according to the body mass index (BMI), the patient was overweight⁷ (BMI: 28.88 kg/m²). Specialized nutritional support was not required during this period.

In March 2020, she sought emergency care due to bilateral hearing loss, loss of visual acuity and headache, showing that the disease was spreading to leptomeninges. She was then submitted to radiotherapy in the skull (whole brain) in 10 sessions with 30Gy/10fr, until April 2020. Such antineoplastic therapies were performed on an outpatient basis.

Three months later, she returned to the emergency with reduced functionality, convulsive symptoms, loss of sensorium and aphasia. In this admission, a new nutritional assessment was performed, which diagnosed nutritional risk due to food intake less than 75% of needs for seven days, advanced disease and C-reactive protein higher than 1g/ml. During the period at the CH I, the patient received clear liquid or pasty diet, according to the degree of consciousness and maintained absent bowel function. With already extensive leptomeningeal spread, exclusive palliative treatment was decided, and the patient was transferred to Cancer Hospital IV (CH IV) INCA's Palliative Care Unit the next day.

PALLIATIVE CARE FOCUSED TO NUTRITIONAL APPROACH

The patient was admitted to CH IV in June 2020, with a Karnofsky Performance Status (KPS) of 20%, fluctuations in the level of consciousness and moments of agitation. With decreasing serum albumin concentrations and weight loss of 20% in about a year, associated with the presence of multiple symptoms such as progressive dysphagia, dry mouth and intestinal constipation, nutritional risk was configured (food intake less than 60% of needs for seven days and persistence of signs and nutritional symptoms impact)⁴.

From the 1st to the 8th day of hospitalization, she remained on zero diet. In the few moments when she was more alert, there was an attempt to offer liquid oral diet, which could not be achieved due to high risk of bronchoaspiration. The nutrition team provided clarification about the infeasibility of oral feeding during the daily visits and the family members were anxious because of lack of food.

After discussions among the multiprofessional team and conversations with the patient's family members, it was decided to place the nasogastric catheter (NEC) to establish an accessory alimentary route on the 9th day of hospitalization. The offer of nutritional therapy corresponded to about 58% of caloric and 48% of protein estimates. Due to the risk of re-feeding syndrome, the initial nutritional planning should include 20kcal/kg and 1.2g/kg. Because of the difficulty of information about the patient's current weight, the body mass was estimated at 65kg. Based on nutritional risk assessment, nutritional requirements, as well as ethical aspects that permeate the definition of conduct in palliative care, the enteral diet was started with standard polymer formulation, reduced volume, and slow infusion rate.

This conduct was well tolerated for 5 days, but the progression of the diet could not be carried out. On the 14th day, with the patient with 10% KPS, end of life care was decided, and the enteral diet was suspended. On the 18th day, after a decision shared between the team and the family, the NEC was removed, and the patient died on her 27th day of hospitalization. Figure 1 illustrates the nutritional behaviors according to the patient's evolution during hospitalization in Palliative Care Unit.

DISCUSSION

One of the main challenges of this nutritional approach was the establishment of an appropriate, safe

dietary route, proportional to the patient's actual prognosis but, however, providing comfort, focused primarily to the quality of life and death. The patient had an unfavorable prognosis and was initially considered to be in an advanced stage of the disease and, therefore, in the final stage of life. In the context of palliative care, the approach changes according to the diagnosis and is related to the moment when the patient is in the course of the disease's evolution. Thus, the nutritional care can be divided into two stages: in the advanced phase, reduce the impact of the symptoms and ensure the quality of life of the patients and family; in the final phase of life, provide comfort⁸.

The possibility of feeding, whether orally or accessory, was a desire of the family, who believed it could offer benefits to the patient, revealing a gap between the reality of the patient and the false expectations of the benefits that nutrition could provide. In this scenario, the multidisciplinary team attempted to mitigate the suffering⁸.

The deliberation about the NEC placement to feed the patient was based in the decision shared between the family and the team, going through technical questions and moral reflections. Due to the patient's reduced level of awareness, care planning in conjunction with the family and the multidisciplinary team could probably justify more appropriate strategies for the shared decision-making process⁸. The enteral diet was started and kept low in all days it was adopted, since, in the context of the severely ill patient in palliative care, it may be preferable to use enteral formulas with lower energy and protein density and in restricted volumes⁹.

From the perception of the significant clinical worsening and the infeasibility of continuing the enteral diet, the decision shared between the family and the multidisciplinary team for the suspension of nutritional support could be justified not only to offer comfort but also to improve the symptoms as reduction of secretion and number of aspirations, avoiding ineffective therapies.

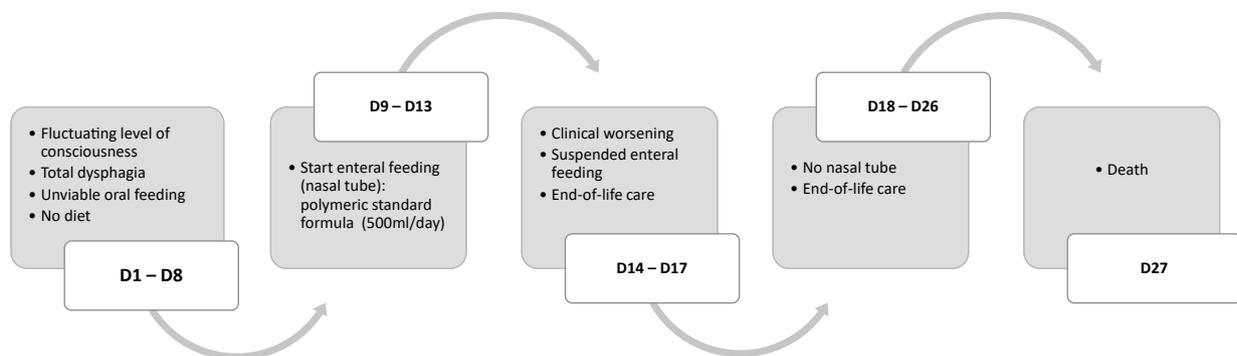


Figure 1. Clinical and nutritional evolution of a patient with leptomeningeal metastatic colon cancer hospitalized in exclusive palliative care

Note: D: day of hospitalization.

In the end-of-life care phase, nutritional therapy must be considered as an individualized process and an integral part of care planning, to respect the wishes, beliefs, and values of the patient and its family. Respecting these values means to offer comfort and quality of life or death. The family requested the multiprofessional team to remove the NEC and mechanical restraint, to which the team accepted, prioritizing the patient's quality of death¹⁰.

To our knowledge, there are no studies in the literature that correlate leptomeningeal carcinomatosis, nutritional approach and cancer palliative care. There is also no evidence of nutritional therapy and leptomeningeal injury in experimental studies. However, the conduct in this context transcends nutritional needs and inserts the patient into a biopsychosocial situation, with focus on quality of life.

CONCLUSION

Changes in nutritional status occur in patients undergoing palliative care. Ensuring nutrition in a chronic, debilitating, care-dependent condition is a challenge. A multifaceted approach, aimed at the patient and the caregiver, needs to be carried out.

The nutritional approach of patients with leptomeningeal metastatic colon cancer in palliative care must be individualized. It is necessary to reconcile a safe food route for quality of life and death, addressing not only the patient, but also the feelings and meanings the family members attribute to food.

CONTRIBUTIONS

All authors contributed equally to the design and planning of the study, data collection, analysis and interpretation, wording, critical review and approved the final version to be published.

DECLARATION OF CONFLICT OF INTEREST

There is no conflict of interest to declare.

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