

# Enteral nutritional therapy and its non-acceptance by pediatric cancer patient: a clinical case report

## *Terapia nutricional enteral e sua não aceitação por paciente oncológico pediátrico: um relato de caso clínico*

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### **RESUMO**

**Introdução:** O presente caso clínico aborda a terapia nutricional enteral via cateter e sua rejeição inicial pela mãe e pelo paciente pediátrico oncológico desnutrido grave, apesar de ser necessária a indicação dessa via alternativa de administração da dieta para suprir as necessidades nutricionais do doente. Objetivou-se, portanto, examinar a rejeição da terapia pelo paciente e cuidador. **Métodos:** Foram avaliados os parâmetros antropométricos, dietéticos, físicos e bioquímicos do doente e realizadas pesquisas bibliográficas acerca do tema terapia nutricional enteral. **Resultados:** Durante o período de hospitalização do infante, o paciente e sua mãe foram diagnosticados com depressão reativa, o que motivou a hipótese de que a não aceitação da terapia nutricional enteral pelo doente e/ou cuidadora estava associada a esse transtorno psíquico. Destacaram-se como resultados os entendimentos da univocidade da relação cuidador e paciente pediátrico oncológico e da depressão reativa como fator interveniente da não aceitação da terapia nutricional via cateter. **Conclusões:** Os resultados desse estudo podem contribuir para novas abordagens no cuidado nutricional de pacientes oncológicos pediátricos submetidos a esse tipo de terapêutica.

### **ABSTRACT**

**Introduction:** Sometimes, enteral nutritional therapy via catheter is absolutely necessary for the nutritional needs of an oncological child and a clinical case is presented herein that involved its initial rejection by the mother and her oncological child who was suffering from severe lack of nutrition. The objective of this study was to examine why the patient and responsible rejected the enteral nutritional therapy. **Methods:** It was performed anthropometric, dietetic, physical and biochemical evaluations and literature searches were conducted on enteral nutritional therapy. **Results:** During the hospitalization of the child, both the mother and child were diagnosed with reactive depression, which motivated the hypothesis that the enteral nutritional therapy rejection was due to a psychic disorder. In evidence, as seen in the results, is the understanding of the univocality of the relationship between the responsible and the oncologic patient and the reactive depression as an intervening factor for nutritional therapy acceptance. **Conclusions:** The results of this study could contribute to new approaches for the nutritional care of oncologic patients submitted to this type of therapy.

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## INTRODUCTION

Enteral nutritional therapy (ENT) is an important tool with physiological and metabolic advantages for aiding oncological patients in the maintenance of their nutritional state<sup>1</sup>. It also significantly reduces the toxic effects of chemotherapy, improves the psychological state of mind, which in turn, promotes a sense of well-being and improves the oncological patient's quality of life, especially if adopted early enough<sup>2</sup>. ENT is indicated when oral food ingestion becomes 70-80% inferior to the daily energy requirements for a period of 3 to 5 days, the weight/height relationship is lower than 90% (or percentile 10), or there is severe lack of nutrition<sup>3</sup>.

In this clinical case, ENT was not well accepted by the mother and by the patient in the beginning of dietary treatment. However, this means of administering the diet should be adopted to better attend the nutritional needs of the patient whose oral food ingestion totaled only 15% of the needed calories, quantification registered during three days. The objective of this research was to evaluate why this unacceptability of ENT occurred. Reflecting on this theme could help to identify the intervening factor(s) of this attitude, which in turn, could possibly contribute to new approaches for the nutritional care of pediatric oncological patients undergoing this type of therapy.

## CLINICAL CASE (METHOD AND RESULTS)

The patient was a 4-year 9-month old boy diagnosed with cerebral cancer. During hospitalization, on the pediatric ward of the Federal University of Minas Gerais' Clinical Hospital, the diagnosis of reactive depression was added and he was submitted to dietary and chemo therapies.

During the anthropometric evaluation and in accordance with well-known technique<sup>4</sup>, his initial weight was verified to be 14.6 kg and his height, 113 cm. To diagnose nutritional state, the anthropometric indexes were used: weight over height (W/H), weight over age (W/A) and height over age (H/A). According to the parameters set by WHO (2006), the patient was extremely underweight for his height; required surveillance for being underweight for his age (W/A between percentiles 5 and 15, and Scores-Z > -2 and < -1); and adequate height for age (H/A = percentile 85 and Score-Z > +1 and < +2).

The nutritional recommendations from Aspen<sup>5</sup> were used to estimate the calories and protein required. The caloric need was estimated to be 1785Kcal/day and

protein intake to be 39g (2.0g/kg/day). The weight used for the calculation base was 19.6 kg, taking into consideration the expected weight for a height in the 50 percentile and activity factor of 1.

The patient's food intake was registered daily and evaluated to be only 271 Kcal/day for a three-day period, corresponding to 15% of an adequate caloric intake. Anorexia, diarrhea and vomiting were identified when the symptoms were evaluated. The physical exam showed signs of muscular mass loss. The biochemical results came up with iron deficiency anemia (Hb=8.5mg/dL, Hm=3.69x10<sup>6</sup>/mm<sup>3</sup>, Ht=27.5%), hypocalcemia (ionized serum Ca=1.18mg/dL) and hypo-potassium (K=2.9mg/dL). During anthropometric, dietetic, physical and biochemical evaluations, the patient was diagnosed to be suffering from severe lack of nutrition.

As for nutritional conduct, dietetic modifications were made with the objective of adjusting the hospital diet to the child's preferences and habits and an oral calorie and protein complement was introduced. The ingestion of the energetic/protein supplement however proved to be inadequate, totaling an average supply of 300 Kcal/day and 7g of protein/day, which was equivalent of 22% and 18% of the needed calorie and protein intake, respectively, in a three-consecutive-day period.

Considering the severe malnutrition prognosis and continued insufficient food intake, an enteral pediatric diet was introduced (standard polymer formula) administered by means of a catheter positioned at the gastric antral. By gradually increasing the volume offered by the enteral diet, it was possible to induce a 1600 kcal/day intake, corresponding to a 90% calorie adequacy. The prescribed diet consisted of enteral nutritional support associated with the previously mentioned nutritionally supplemented oral diet and complemented the patient's calorie intake by 300 Kcal/day. The patient did not present physical complications related to the administration of the enteral nutrition.

The study was approved by the Ethics Committee of the University of Minas Gerais, Brazil (protocol number 0407.0.203.000-10) according to the Declaration of Helsinki and the Resolution 196/96 of the National Health Council.

Even though the importance of the ENT treatment for the patient was clearly explained to the family, the treatment was not initially accepted by the mother who could not envision the therapy as a form of providing nutrition to her child, but saw it as an indication of worsening of

the disease. The same non-acceptance behavior was expressed by the patient who removed the catheter so that the prescribed diet volume was not always administered. During the child's stay at the hospital, it is important to note that the mother was also diagnosed with reactive depression (denominated secondary or exogenous because it developed due to the patient's external environmental factors).

While accompanying the nutritional therapy and facing the negative attitude of the mother and son to catheter-applied ENT, the nutritional team tried to understand and modify this specific behavior to a more positive direction.

Presuming a hypothesis that this ENT rejection behavior originated from reactive depression, a theoretical investigation about this psychological reactions was initiated.

## DISCUSSION

The analysis of this case put into evidence the univocity of the mother/responsible and the pediatric oncologic patient. It showed that even though there is a designated relationship between the two, they express themselves as a single body. In other words, mother and son manifested the same psychological disorder (reactive depression), and express the same negative attitude towards the ENT treatment. As such, clinically, the inability to separate the bodies was evident, signifying that in the relationship between the mother/responsible and pediatric oncologic patient, interfering with the first member of the relationship would affect the second member and vice-versa. It then became evident that the strategy should be to first convince the mother to accept the ENT treatment for nutritional intervention.

The ENT treatment represents the incapacity to eat and because of this, generated depressive disorders in the patient and family<sup>6</sup>. In this context, the principal diagnostic characteristics for reactive depression are the loss of a loved one or the presence of diseases, such as cancer<sup>7</sup>. Many research groups have studied this type of depression in oncologic patients since 1960 because in cancer, this secondary depression can lead to the low adherence to treatment and recommendations, principally therapeutic nutritional treatment<sup>8</sup>.

By altering the natural manner to eat, ENT influences the perception of being normal or the pathology. When a patient is unable to eat and has to use an alternative nutritional method, this person can have the impression that the disease is getting worse and that the prognostic

is not good or simply that there is no improvement<sup>9</sup>. Thus, scientific literature endorses the adequacy of the presumed hypothesis. Reactive depression was implicated in the non-acceptance of the ENT treatment, putting into evidence the explicit impression that it was a "bad omen about the disease" and became the intervening factor for refusing the treatment. This was in agreement with the proposed objective of this study.

In lieu of the analysis results, the nutritional team worked to convince the mother that the ENT conception is instrumental for a good prognostic. They showed the mother the positive impact it had on other patients under conditions similar to those of her son. They told her about other studies performed in other pediatric wards at hospitals with oncological patients submitted to nutritional therapy, where the well-being of the patients increased after beginning enteral nutritional support and where parental acceptance of this type of intervention corresponded to more than 80%<sup>10</sup>.

In this clinical context, the understanding of the univocity of the relationship between the mother/responsible and the pediatric oncologic patient and the reactive depression as a intervening factor in the non-acceptance of ENT led to the actions that resulted in the acceptance of the treatment to the point where the mother opted for the continued use of the therapy at home after the patient was released from the hospital.

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