Original Article

Elective neurosurgery: is consistency adaptation of the diet necessary?

Neurocirurgia eletiva: é necessária a adaptação de consistência da dieta?

DOI: 10.37111/braspenj.2026.41.1.24-en

Beatriz Dardes Bastos[1]
Gabriela Duarte Dias[2]
Fábio Santana Machado[3]
Caroline Valverde Pereira[4]
Érika Suiter[5]
Ariane Nadólskis Severine[6]

Keywords:
Neurosurgery. Elective surgical procedures. Diet therapy. Postoperative care.

Unitermos:
Neurocirurgia. Procedimentos cirúrgicos eletivos. Dietoterapia. Cuidados pós-operatórios.

Address for correspondence:
Beatriz Dardes Bastos
Rua Dona Adma Jafet, 91 – Hospital Sírio Libanês, Nutrição – São Paulo, SP, Brasil – CEP: 01308-050
E-mail: bdbastos@hotmail.com

Submissão:
January 5th, 2026

Aceito para publicação:
February 19th, 2026

Data da publicação:
February 27th, 2026

ABSTRACT

Introduction: Elective neurosurgeries can lead to postoperative complications like pain, nausea, and vomiting, affecting oral feeding. Early postoperative oral nutritional therapy is crucial for recovery. Diet adaptations are tailored to individual needs, tolerance, and type of neurosurgery performed to ensure adequate intake. Due to the absence of scientific literature on the subject, this retrospective cohort study analyzed how elective neurosurgery influences the need for diet consistency adaptation in the postoperative period of patients without previous swallowing changes or neurological deficits. **Methods:** Data from 130 adult patients undergoing elective neurosurgeries between June 2023 and June 2024 were collected from electronic medical records. **Results:** 61.5% of patients needed diet adaptations on the first postoperative day. Soft (20.8%) and semisolid (18.5%) diets being most common consistencies. A significant correlation existed between neurosurgery type and diet adaptation: 100% of transnasal surgeries required consistency changes, compared to 58.3% for frontal, parietal, or temporal craniotomies. Among the main factors that led to diet consistency adaptation, the most prevalent were medical prescription (16.9%), nausea (14.6%), pain when chewing/swallowing (13%), and vomiting (13%). **Conclusion:** The results of this study reinforce the importance of considering the type of neurosurgery when prescribing the diet and confirm the relevance of individualized nutritional care in the postoperative period of elective neurosurgeries.

RESUMO

Introdução: Neurocirurgias eletivas podem cursar com complicações pós-operatórias, como dor, náusea e vômito, e estas podem afetar a aceitação alimentar. A nutrição oral no pós-operatório tem indicação precoce e é fundamental para a recuperação do paciente. Já a adaptação dessa dieta é indicada conforme a necessidade e tolerância individual do paciente, além do tipo de neurocirurgia realizada. Essas adaptações podem ser necessárias para atingir um aporte nutricional adequado. Devido à ausência de literatura científica no tema, este estudo buscou avaliar como a neurocirurgia eletiva influencia na necessidade de adaptação de consistência da dieta no pós-operatório de pacientes sem alterações prévias de deglutição ou déficit neurológico. **Método:** O estudo foi composto por uma coorte retrospectiva e envolveu pacientes adultos submetidos a neurocirurgias eletivas entre junho de 2023 a junho de 2024. Foram incluídos 130 pacientes. **Resultados:** 61,5% dos pacientes necessitaram de adaptações na consistência da dieta no primeiro dia de pós-operatório. A dieta leve (20,8) e dieta semissólida (18,5%) foram os tipos de consistência mais frequentes. A necessidade de adaptação variou significativamente conforme o tipo de neurocirurgia: 100% das cirurgias transnasais exigiram ajustes, e 58,3% nas craniotomias frontais, parietais ou temporais também. Os principais fatores que levaram a adaptação de consistência da dieta foram a prescrição médica (16,9%), náusea (14,6%), dor ao mastigar/deglutir (13%) e vômitos (13%). **Conclusão:** Os resultados deste estudo reforçam a importância de considerar o tipo de neurocirurgia no momento da prescrição dietética e confirmam a relevância de um cuidado nutricional individualizado no pós-operatório de neurocirurgias eletivas.

1. Nutricionista, Especialista em Terapia Intensiva pelo Instituto Sírio-Libanês de Ensino e Pesquisa (IEP-HSL), Hospital Sírio Libanês, São Paulo, SP, Brasil.
2. Nutricionista, Especialista em Nutrição Clínica em Gastroenterologia pelo Instituto Central do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (ICHC-FMUSP), Pós-graduação na modalidade de aperfeiçoamento, "Equipe multidisciplinar de terapia nutricional: Protocolos para manejo clínico" pelo CTN-USP, Especialista em Nutrição Parenteral e Enteral pela Sociedade Brasileira de Nutrição Clínica, Parenteral e Enteral (SBNPE), Hospital Sírio-Libanês. São Paulo, SP, Brasil.
3. Médico Intensivista, Médico, Doutor em Patologia pela Universidade de São Paulo (2001), Neurointensivista da UTI neurológica do Hospital Sírio-Libanês, Hospital Sírio Libanês. São Paulo, SP, Brasil.
4. Nutricionista, Especialista em Paciente Crítico pelo Programa de Residência Multiprofissional no Cuidado ao Paciente Crítico do Hospital Sírio Libanês, Hospital Sírio-Libanês, São Paulo, SP, Brasil.
5. Nutricionista coordenadora do Serviço de Alimentação do Hospital Sírio-Libanês, Especialista em Nutrição Clínica pela Associação Brasileira de Nutrição, Especialista em Terapia Ortomolecular, Nutrição Celular e Longevidade pela Faculdade de Ciências da Saúde de São Paulo, Especialista Preceptores do Sistema Único de Saúde pelo Sírio-Libanês Ensino e Pesquisa- Hospital Sírio-Libanês, Especialista em Gestão de Atenção à Saúde pelo Sírio-Libanês Ensino e Pesquisa no Hospital Sírio-Libanês, Hospital Sírio-Libanês, São Paulo, SP, Brasil.
6. Nutricionista gerente do Serviço de Alimentação, Especialista em Gestão de Atenção à Saúde pelo Sírio-Libanês Ensino e Pesquisa pelo Hospital Sírio-Libanês, Mestre em Ciências da Saúde pela Universidade Federal de São Paulo pela Escola Paulista de Medicina, Especialista em Nutrição Clínica pela Associação Brasileira de Nutrição, Hospital Sírio-Libanês, São Paulo, SP, Brasil.

INTRODUCTION

Neurosurgical patients undergoing elective surgeries have a high risk of neurological and systemic complications during the immediate and late postoperative period[1]. Complications vary concerning the affected system, characteristics, and postoperative period[2]. The main objective of post-surgical care is the prevention and early identification of these repercussions through a multidisciplinary approach[3]. Among the complications that can affect food intake or even lead to the interruption of oral feeding[4] are nausea, vomiting, gastroesophageal reflux, pain[2], and dysphagia[5].

Early oral nutritional therapy is associated with a lower incidence of postoperative complications and shorter length of hospital stay[5]. In most cases, oral feeding can be started in the hours following surgery and should be the preferred route of feeding in the hospital setting[6,7], with adaptation of the oral diet according to individual tolerance and type of surgery performed being recommended[6]. Both quantitative and qualitative adjustments may be necessary to allow better acceptance of the offered diet, in order to meet diverse clinical conditions[8]. Thus, nutritional monitoring and the evolution of diet consistency are necessary during hospitalization to achieve adequate nutritional intake[9] and minimize or even avoid these symptoms.

In this context, different neurosurgical approaches present distinct anatomical and functional repercussions that may influence oral intake tolerance and the need for dietary consistency adjustments postoperatively. In frontal, temporal, and parietal craniotomies, the manipulation of masticatory muscles can result in limited mouth opening, pain while chewing, and a transient reduction in masticatory efficiency[10]. In contrast, in transnasal approaches, endoscopic access can cause edema, nasal obstruction, bleeding, and swallowing discomfort, impacting food acceptance[11]. Additionally, surgical manipulation may temporarily affect cranial nerves involved in swallowing coordination, which also justifies the need for dietary adaptations[12]. Thus, each surgical approach presents specificities that influence the choice of consistency as a strategy to improve safety, comfort, and nutritional intake in the immediate postoperative period.

Although the literature addresses care and symptoms in the postoperative period, studies specifically addressing the oral diet and the adaptation of this diet's consistency are needed. Thus, this study sought to evaluate how elective neurosurgery influences the need for diet consistency changes in patients without previous swallowing alterations or neurological deficits and to contribute to the advancement of the scientific community on the topic.

METHODS

This retrospective cohort study analyzed data from electronic health records of adult patients (over 18 years old) who underwent elective neurosurgery at a private philanthropic tertiary hospital in São Paulo, Brazil, from June 2023 to June 2024. The convenience non-probabilistic sample was determined by the number of patients who underwent elective neurosurgery and were referred to the general intensive care unit (ICU) in the immediate postoperative period, with data collected during the first seven postoperative days.

All patients over 18 years old who underwent elective neurosurgery were included in the research. However, those with previous neurological deficits that interfered with feeding, patients with prior speech-language pathology follow-up, and patients with pre-existing diet consistency adaptation were excluded. Additionally, patients who presented with acute neurological deficits after elective neurosurgery that made oral feeding impossible were excluded from the research.

The need for diet consistency adaptation was the main outcome variable of the study, being a binary categorical type. Other variables included in the analysis were related to the patients, sociodemographic characteristics and the diet offered. Regarding patient identification, data such as age, gender, current diagnosis, previous diagnoses, type of elective neurosurgery performed, and total length of hospital stay were collected. Regarding the type of neurosurgery, patients were divided into groups according to the surgical incision: frontal, temporal, or parietal craniotomies; other craniotomies, including occipital, suboccipital, parieto-occipital, or retrosigmoid; transnasal surgeries, and other neurosurgeries that did not belong to any of the previous groups (trepanation, cervicotomy, and laminectomy).

Regarding the diet offered, the consistency of the diet during the first seven postoperative days was collected, even if the patients were discharged from the ICU during this period. The dietary prescriptions were categorized according to the institution's standard, represented by the diets: General, Soft, Light, Semisolid, Pureed, Liquid, and Fasting, and variations such as the Light diet with adapted protein. The General diet is characterized by the absence of consistency modifications, including all food groups, and is indicated for patients without masticatory, digestive, or swallowing limitations. The Soft diet consists of foods softened by cooking, allowing all food groups but excluding raw vegetables, salads, and dried or candied fruits, aiming to reduce masticatory and digestive effort. The Light diet also includes soft and tender foods but with greater dietary restriction, excluding milk and dairy products, coffee, high-fiber foods, raw vegetables, legumes, and nuts, aiming to minimize digestive stimuli. The Light diet with adapted protein maintains the characteristics of the Light diet, differing by the modification of the protein source. It prioritizes fish-based

preparations and omelets, as well as ground, shredded, or cubed beef and chicken with sauce, to facilitate chewing. The Semisolid diet consists of cooked and soft foods that require little chewing, including preparations such as purees, creams, thick soups, and shredded or ground meats. The Pureed diet is characterized by foods and preparations in a puree consistency, which are well-homogenized. In turn, the Liquid diet exclusively includes preparations in liquid form or those that liquefy in the oral cavity, such as broths, blended soups, gelatin, and juices.

Whenever an adaptation of the dietary consistency was necessary, the type of adaptation and its reason were recorded. The reasons were grouped into: preventive medical prescription, when the medical team opted for an adapted consistency due to clinical factors related to the type of surgery (e.g., transnasal manipulation, risk of nasal escape, transient reduction in the level of consciousness, or potential aspiration risk), even in the absence of symptoms, patient preference, and symptoms that could affect food acceptance. Postoperative immediate fasting time was also collected.

Statistical analysis was performed using the Stata statistical software, version 16.1. Univariate analyses were performed, which described the sample with frequencies (categorical variables) and measures of central tendency and dispersion (continuous variables). The bivariate analysis explored the relationship between independent variables and diet adaptation, using tests such as chi-square and Kruskal-Wallis, with statistical significance defined by $p<0.05$.

The present work was submitted for analysis and approval by the Research Ethics Committee of the Beneficent Society of Ladies of Hospital Sírio Libanês, State of São Paulo (opinion no. 7.226.130). A confidentiality agreement was established, in which the principal investigator and those responsible undertook not to disclose patient information. The ethics approval date from CEP/CONEP (Plataforma Brasil) was 11/14/2024.

RESULTS

One hundred and forty-seven patients were selected, of which 17 were removed (7 for presenting previous deficits that interfered in feeding, 7 due to pre-existing chewing or swallowing difficulty that required diet consistency adaptation, and 3 for having presented acute neurological deficit postoperatively), resulting in a total of 130 patients included in the research (Figure 1).

The average age of the studied patients was 51 years, of which 57.7% (n=75) were men and 42.3% (n=55) were women. Regarding background, 44.6% of the patients had non-communicable chronic diseases (NCDs), 30.8% had a history of prior central nervous system (CNS) tumors, and 15.4% reported other types of cancer. Furthermore, 16.2% had a diagnosis of hypothyroidism and only 2.3%

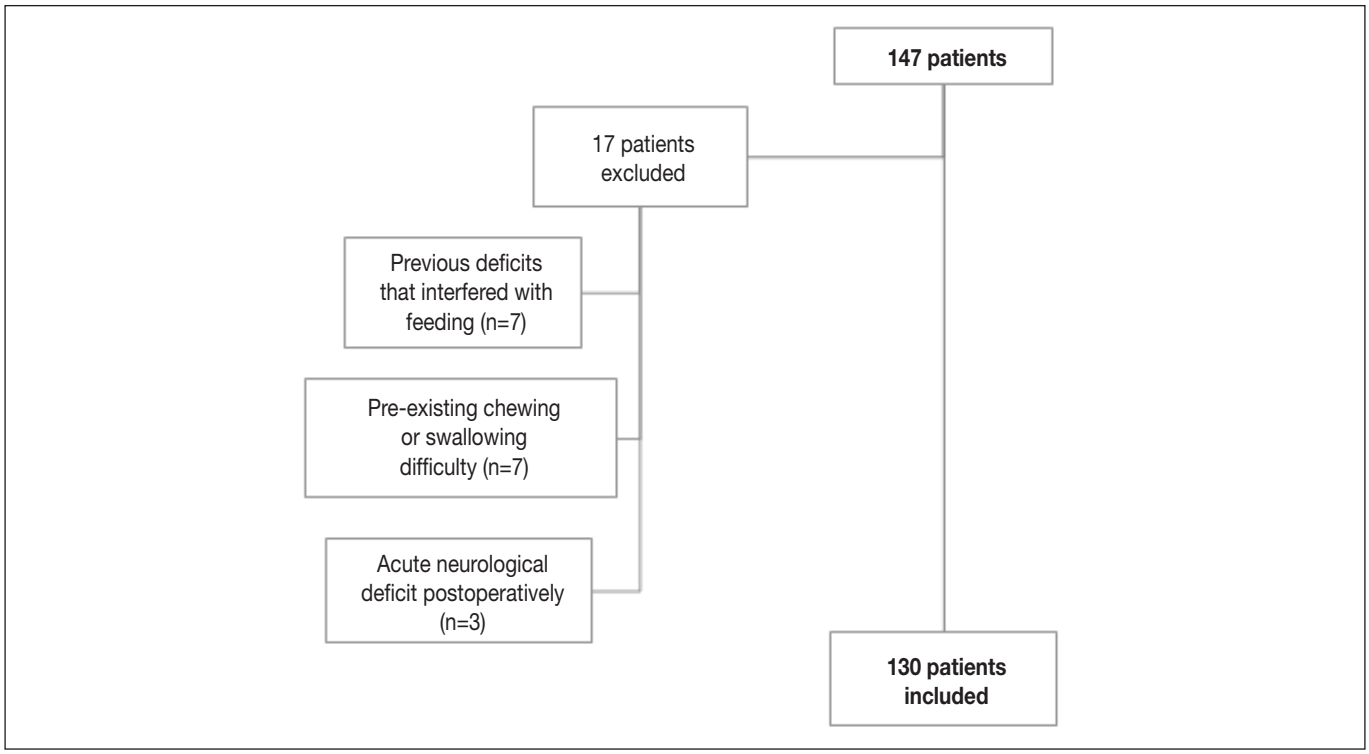

Figure 1 - *Flowchart of exclusion criteria.*
n = sample size.

had hyperthyroidism. Less frequent conditions were also observed, indicating a diversity of conditions present in the sample.

There was a predominance of brain tumor diagnosis, representing 91.5% of the sample (n=119). The other diagnoses were less frequent, with 4.6% being cerebral aneurysms (n=6), 3% subdural hematomas (n=4), and 0.77% periventricular nodular heterotopia (n=1).

In the analyzed sample, 64.6% of the patients underwent craniotomies with frontal, parietal, or temporal incision, representing the most frequent elective neurosurgery. Neurosurgical procedures with transnasal incisions were performed in 16.9% of cases, while other craniotomies (with occipital, suboccipital, parieto-occipital, or retrosigmoid incision) and other elective neurosurgeries (such as trepanation, laminectomy, and cervicotomy) were less common, each representing 9.2% of the procedures (Table 1).

Table 1 – Profile of elective neurosurgery.

Elective neurosurgery	Frequency	%
Craniotomies	84	64.7
Transnasal	22	16.9
Other craniotomies	12	9.2
Other elective neurosurgeries	12	9.2

The need for dietary adaptation on the first postoperative day corresponds to any dietary prescription other than the general diet, or any alteration of macro or micronutrients. However, the present study was restricted exclusively to the assessment of consistency changes. In the analyzed sample, 61.5% of patients (n=80) required dietary adaptation on the first postoperative day, while 38.4% (n=50) did not require adjustments (Table 2).

The light diet (20.8%) and the semisolid diet (18.5%) were also commonly prescribed, while the pureed diet was indicated for 9.2% of the patients. Less frequent diets included the soft diet (5.4%), light diet with adapted protein (5.4%), and liquid diet (1.5%). Only one patient (0.8%) remained fasting on the first postoperative day due to presenting with dysphagia, as assessed by the speech-language pathology team (Table 2).

The analysis of the relationship between the type of neurosurgery performed and the need for diet adaptation on the first postoperative day reveals statistically significant differences ($p < 0.001$). The entire sample (n=22) of patients who underwent transnasal surgery required dietary

Table 2 – Distribution of diets prescribed in the immediate postoperative period.

Diet	Frequency	%
General	50	38.4
Soft	7	5.4
Light	27	20.8
Semisolid	24	18.5
Pureed	12	9.2
Light diet with adapted protein	7	5.4
Liquid	2	1.5
Fasting	1	0.8

adaptation. Among patients who underwent craniotomies (with frontal, parietal, or temporal incision), 58.3% (n=49) required adaptation. Patients who underwent other craniotomies showed the lowest need for adaptation, with only 25% (n=3). Finally, those who underwent other neurosurgeries had a balanced division, with 50% (n=6) (Table 3). These results indicate that the type of surgery is associated with the likelihood of needing diet adaptation, with transnasal surgeries being more likely to require dietary adjustments on the first postoperative day.

Table 3 – Association between the type of elective neurosurgery and the need for diet consistency adaptation on the first postoperative day.

Elective Neurosurgery	Consistency Adaptation			%
	Total	No	Yes	
Craniotomies	84	35	49	58.3
Transnasal	22	0	22	100.0
Other craniotomies	12	9	3	25.0
Other elective neurosurgeries	12	6	6	50.0
Total	130	50	80	61.5

It is observed that, on the first postoperative day, all transnasal surgeries required dietary adaptations, among which the light diet and the pureed diet were the most prevalent (both 31.8%), followed by the prescription of the semisolid diet (13.6%), with 59% of these diets

modified to cold temperature. In contrast, craniotomies with frontal, parietal, or temporal incisions showed a proportion of 41.6% of general diet, followed by 22.6% of semisolid diet and 19% of light diet. Other craniotomies showed higher proportions of general diet (75%), indicating a lower need for adaptation. In the group of other neurosurgeries, half of the patients received a general diet (50%), while the rest were divided into different types of adaptations (16.7% light, 8.3% semi-solid, and 8.3% soft) (Figure 2).

The results also indicate significant differences among the types of neurosurgery regarding the duration of time patients required an adapted-consistency diet (p=0.0110). Patients who underwent transnasal surgery showed the longest mean adaptation time (2.6 days), while the group that underwent other neurosurgeries had 1.7 days, followed by those who underwent craniotomies with frontal, parietal, or temporal incision (1.5 days), and other craniotomies (0.8 days). The evidence suggests that the type of neurosurgery influences the time necessary for diet adaptation, possibly reflecting differences in the complexity or impact of the interventions.

It was also observed that the reintroduction of the regular consistency occurred progressively, according to each patient's clinical tolerance and manifestations. Dietary progression was managed by the nutrition team, without the need for a speech-language pathology (SLP) assessment in most cases, except when dysphagia was suspected or if symptoms persisted beyond the first 24 hours postoperatively.

Of the evaluated patients, 32.3% did not require diet adaptation on any of the 7 postoperative days. About 53% of patients spent up to 1 day in this condition, while 71.5% spent a maximum of 2 days. Only 12.3% of the patients remained on diet adaptation for 4 days or more. The maximum values recorded were 6 and 7 days, representing 2.3% each. The distribution is asymmetrical, concentrated on smaller values, with more than half of the patients (53%) spending up to 1 day in adaptation.

The reasons for consistency adaptation were represented by preventive medical prescription, patient preference, or the occurrence of symptoms that could affect food intake. The most prevalent reason was related to medical prescription (16.9%). Nausea (14.6%), pain upon chewing or swallowing (13%), and vomiting (13%) were the other most frequent factors. Complaints such as headache (12.3%), nasal bleeding (3.8%), dysphagia (3%), dysarthria (3%), drowsiness (2.3%), aphasia (2.3%), and facial paralysis (2.3%) were less frequent. Patient preference was a reason in only 1.5% of cases, while dizziness was not recorded (Table 4). These data highlight that symptoms related to gastrointestinal discomfort and medical interventions were the most common reasons for diet adaptation during this initial recovery period.

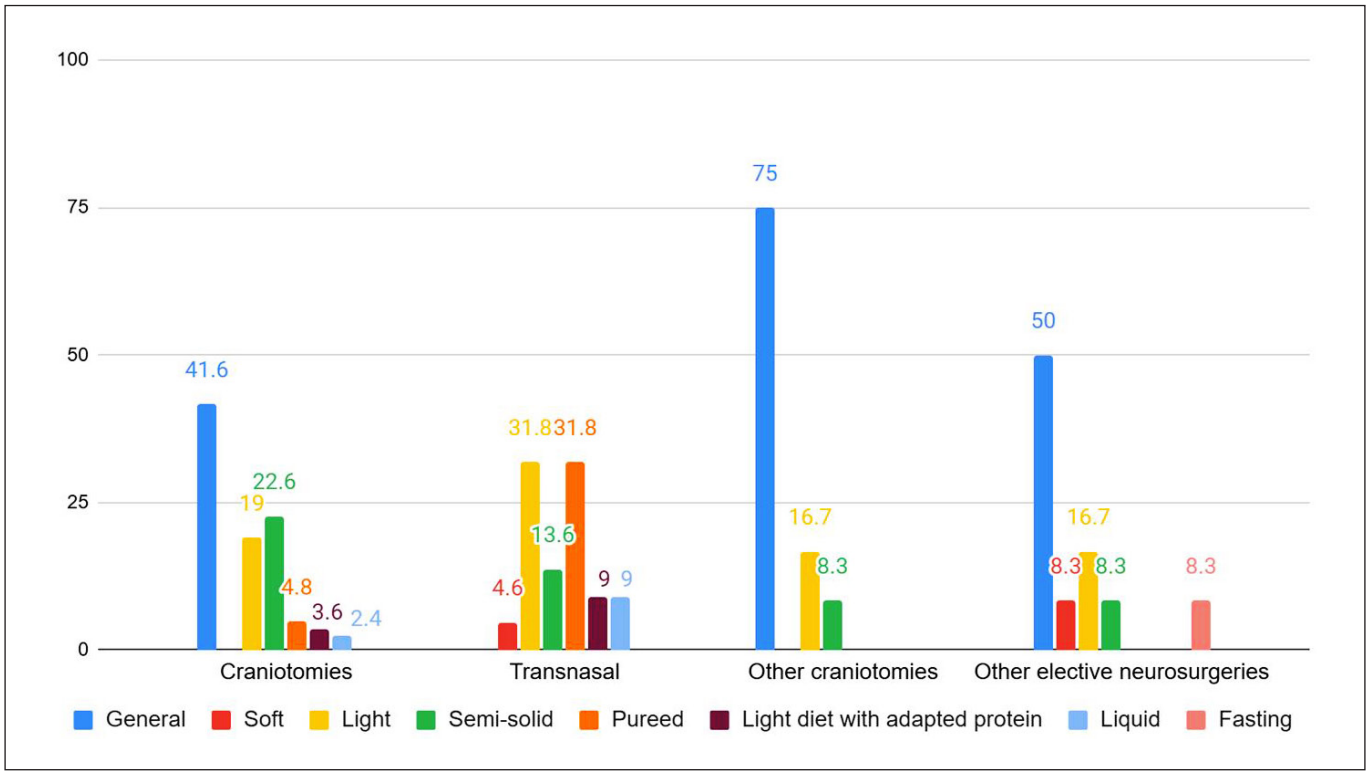

Figure 2 - *Prevalence of dietary prescriptions on the first postoperative day, according to neurosurgery.*

Table 4 – Prevalence of reasons for diet adaptation in the immediate postoperative period.

Reasons	Frequency	%
Medical prescription	22	16.9
Nausea	19	14.6
Pain upon chewing or swallowing	17	13.0
Vomiting	17	13.0
Headache	16	12.3
Nasal bleeding	5	3.8
Dysphagia	4	3.0
Dysarthria	4	3.0
Drowsiness	3	2.3
Aphasia	3	2.3
Facial paralysis	3	2.3
Patient preference	2	1.5
Dizziness	0	-

The mean length of hospital stay for the sample was 7.8 days. When analyzed by type of neurosurgery, the group related to other neurosurgeries showed the longest length of stay, at 8.5 days, followed by craniotomies with frontal, parietal, or temporal incision (8.4 days). Patients who underwent transnasal surgery remained hospitalized for an average of 6.6 days, and the group with other craniotomies for 5.2 days. The Kruskal-Wallis test did not show a statistically significant difference between these groups ($p=0.2475$), suggesting that the type of neurosurgery did not significantly influence the length of hospital stay

DISCUSSION

Although diet consistency adaptation in elective neurosurgeries is not yet mentioned in the scientific literature, through the present study, it is evident that food consistency alteration may be necessary depending on the type of neurosurgery performed. As evidenced in our research, all patients who underwent neurosurgery via the transnasal route required consistency adjustments, while adaptation was necessary for more than half of the patients who underwent craniotomies. This thus demonstrates the association between the type of elective neurosurgery and the need for diet consistency adaptation. These findings may be associated with the type of surgical incision, since the muscles involved in chewing and swallowing may be affected due to operative manipulation[10,13].

Adaptation by medical prescription, responsible for 16.9% of the identified adjustments, warrants specific discussion. In these situations, although the patient did not present immediate gastrointestinal symptoms, the medical team adopted the adaptation as a preventive measure due to clinical factors related to the type of surgery, aiming to reduce the risk of aspiration caused by, for example, transient alterations in the level of consciousness, local edema, and potential cranial nerve involvement[14]. Thus, preventive adaptation may represent a safety strategy, rather than an indication 'unrelated' to the patient's clinical condition.

Furthermore, the modification of food consistency appears to be related to the symptoms present in the postoperative period, reinforcing the importance of individualized nutritional care according to the clinical condition of each patient.

The analysis of postoperative symptoms among patients who required dietary adaptation supports the importance of this measure. In the present study, among patients whose diets were modified in consistency, 14.6% experienced nausea and 13% vomiting. A study conducted in 2017[2] demonstrated that 18.1% of patients undergoing elective neurosurgery experienced vomiting in the immediate postoperative period, a result similar to that observed in the present study. Another similar study identified that 25% of patients presented this symptoms[15], a higher proportion than that observed in this study.

Regarding nasal bleeding, a study that analyzed 91 patients undergoing tumor resection via a transnasal approach identified this complication in eight patients (8.4%)[16], while another similar study reported an incidence of 4.8%[17], values close to those found in the present study, in which 3.8% of patients who had their diets modified in consistency required such modification due to the occurrence of nasal bleeding.

Postoperative pain is also a common complaint in patients undergoing elective neurosurgeries, with a prevalence that can reach 93% in the first 24 to 48 hours after surgery[18]. A study conducted with 100 patients undergoing elective craniotomy confirmed this high incidence, with 59% of participants reporting pain in the immediate postoperative period, with headache being the most frequent complaint, representing 62.7%[19]. Besides causing discomfort, headache can interfere with basic activities such as feeding. In this study, 12.3% of patients who required diet adaptations reported headache, while 13% presented difficulty chewing or swallowing. Studies show that pain can lead to reduced food intake, potentially leading to weight loss[20].

Diet consistency modification aims to alter the texture of foods and preparations, according to the clinical condition of each patient, in order to facilitate food intake and achieve adequate nutritional intake. However, adjusting dietary

consistency alone does not ensure that nutritional goals are met, as softer or pureed preparations may have lower energy and protein density. In such cases, the use of oral nutritional supplements may be necessary to guarantee an intake compatible with nutritional requirements[8]. Despite the recognized relevance of this strategy in hospital nutritional care, the use of oral nutritional supplementation was not evaluated in the present study, as the objective was restricted to analyzing the need for dietary consistency adaptation in the postoperative period of elective neurosurgeries.

Diet consistency modification is one of the pillars of intervention for patients with dysphagia, for example[21]. In the present study, 3% of patients presented dysphagia in the immediate postoperative period, and all of them had their diets adapted in consistency, with only one patient still fasting in the postoperative period for a duration longer than 24 hours. In a systematic review that analyzed 101 studies with patients who underwent surgical treatment for brain tumors, the authors found that 23.5% of patients had postoperative complications, with the most prevalent being dysphagia (7.4%)[22].

The safety and feasibility of early oral feeding in elective neurosurgeries are evidenced by the results of this study. Only 0.8% of the sample needed to remain fasting on the first postoperative day, corroborating with the recommendation that the oral diet should be initiated immediately after surgery, adapting intake according to individual tolerance and the type of surgery performed[6]. Furthermore, because the surgical incision is distant from the gastrointestinal tract, early oral feeding is encouraged for patients in the postoperative period of elective craniotomies[23]. No studies were found that investigated the time of diet adaptation in patients undergoing elective neurosurgeries. However, according to our findings, surgeries with the transnasal approach showed the longest mean adaptation time, followed by the group of other neurosurgeries and craniotomies with frontal, parietal, or temporal incision.

In a randomized clinical trial that evaluated 140 patients undergoing elective craniotomy, the authors observed that those individuals who started an oral diet of solid consistency on the first postoperative day had a shorter length of hospital stay compared to those who started solid feeding later[24]. The mean length of hospital stay in the present research was 7.8 days, with 96.2% of patients starting an oral diet of solid consistency on the first postoperative day. When compared to similar studies, the mean hospitalization time was 12[2] and 5.6 days[16].

CONCLUSION

Given the absence of studies on the topic, the present research fills an important gap in the scientific literature by investigating the association between elective neurosurgeries and diet consistency adaptation during the postoperative period. The results of this study demonstrate the importance of dietary adaptation in elective neurosurgeries, especially in surgeries with a transnasal approach and craniotomies with frontal, parietal, or temporal incisions. The association between diet modification and the presence of symptoms such as headache, nausea, vomiting, and pain upon chewing and swallowing also reinforces the importance of individualized nutritional care.

However, the need for further studies is highlighted in order to increase the statistical significance of the topic. Furthermore, the type of neurosurgery as a sole factor in changing food consistency may have been underestimated, since both the physician and the nutritionist may adapt the food consistency beforehand due to the type of surgical incision.

REFERENCES

1. Bui JQH, Mendis RL, Gelder JM, Sheridan MMP, Wright KM, Jaeger M. Is postoperative intensive care unit admission a prerequisite for elective craniotomy? J Neurosurg. 2011;115(6):1236-41.
2. Siqueira EMP, Diccini S. Complicações pós-operatórias em neurocirurgia eletiva e não eletiva. Acta Paul Enferm. 2017;30(1):101-8. Portuguese.
3. Wan WZ, Luoma AMV. Postoperative care of neurosurgical patients: general principles. Anaesth Int Care Med. 2020;21(7):349-55.
4. Santo LPA, Melo MRS, Pereira CU. Incidência de náuseas e vômitos no pós-operatório imediato dos pacientes neurocirúrgicos. Scientia Plena. 2012;8(3);2012.
5. McCall M, Leone A, Cusimano MD. Nutritional status and body composition of adult patients with brain tumours awaiting surgical resection. Can J Diet Pract Res. 2014;75(3):148-51.
6. Weimann A, Braga M, Carli F, Higashiguchi T, Hübner M, Klek S, et al. ESPEN guideline: clinical nutrition in surgery. Clin Nutr. 2016;36(3):623-50.
7. Matsuba CST, Serpa LF, Pereira SRM, Barbosa JAG, Antunes MS, Anziliero F, et al. Diretriz BRASPEN de enfermagem em terapia nutricional oral, enteral e parenteral. BRASPEN J. 2021;36(Supl 3):2-62.
8. Dock-Nascimento DB, Campos LF, Dias MAG, Fabre MES. Dieta oral no ambiente hospitalar: posicionamento da BRASPEN. BRASPEN J. 2022;37(3):207-27.
9. Ribeiro CM, Miyake LS, Fernandes MCP, Morimoto IMI. Dietas hospitalares por via oral modificadas na consistência: avaliação da adequação da oferta de nutrientes para idosos hospitalizados. BRASPEN J. 2023;38(3):265-71.
10. Gierthmuehlen M, Jarc N, Plachta DTT, Schmoor C, Scheiwe C, Gierthmuehlen PC. Mastication after craniotomy: pilot assessment of postoperative oral health-related quality of life. Acta Neurochir (Wien). 2021;164(5):1347-55.
11. Dolci RLL, Miyake MM, Tateno DA, Cançado NA, Campos CAC, Santos ARL. Postoperative otorhinolaryngologic complications in transnasal endoscopic surgery to access the skull base. Braz J Otorhinolaryngol. 2017;83(3):349-55.
12. Adams JE. Brain surgery: complication avoidance and management. JAMA. 1993;270(16):1988.
13. Ito K, Kubo MO, Kodera R, Takeda S, Endo H. Quantitative assessment of masticatory muscles based on skull muscle attachment areas in Carnivora. Anat Rec. 2024;1-27.

14. Cichero JAY, Lam P, Steele CM, Hanson B, Chen J, Dantas RO, et al. Development of international terminology and definitions for texture-modified foods and thickened fluids used in dysphagia management: the IDDSI framework. Dysphagia. 2017;32(2):293-314.
15. Lonjaret L, Guyonnet M, Berard E, Vironneau M, Peres F, Sacrista S, et al. Postoperative complications after craniotomy for brain tumor surgery. Anaesth Crit Care Pain Med. 2017;36(4):213-18.
16. Santos RP, Zymberg ST, Abucham Filho JZ, Gregório LC, Weckx LLM. Endoscopic transnasal approach to sellart tumors. Rev Bras Otorrinolaringol. 2007;73(4):463-75.
17. Cheng Y, Xue F, Wang TY, Ji JF, Chen W, Wang ZY, et al. Analyses and treatments of postoperative nasal complications after endonasal transsphenoidal resection of pituitary neoplasms. Medicine (Baltimore). 2017;96(15):e6614.
18. Peón AU, Diccini S. Dor pós-operatória em craniotomia. Rev Latino-Am Enfermagem. 2005;13(4):489-95.
19. Ribeiro COM, Pereira CU, Sallum AMC, Marints-Filho PRS, Nunes MS, Carvalho MBT. Dor pós-operatória em pacientes submetidos à craniotomia eletiva. Rev Dor. 2012;13(3):229-34.
20. Silva PB, Trindade LCT, Gallucci MC, Schirr RA. Prevalência de desnutrição e dor em pacientes admitidos pelo serviço de triagem em hospital oncológico. Rev Dor. 2013;14(4):263-6.
21. Peña-Chávez RE, Schaen-Heacock NE, Hitchcock ME, Kurosu A, Suzuki R, Hartel RW, et al. Effects of food and liquid properties on swallowing physiology and function in adults. Dysphagia. 2023;38(3):785-817.
22. Palmisciano P, Ferini G, Watanabe G, Conching A, Ogasawara C, Scalia G, et al. Surgical management of craniovertebral junction schwannomas: a systematic review. Curr Oncol. 2022;29(7):4842-55.
23. Hagan KB, Bhavsar S, Raza SM, Arnold B, Arunkumar R, Dang A, et al. Enhanced recovery after surgery for oncological craniotomies. J Clin Neurosci. 2016;24:10-6.
24. Wang Y, Liu B, Zhao T, Zhao B, Yu D, Jiang X, et al. Safety and efficacy of a novel neurosurgical enhanced recovery after surgery protocol for elective craniotomy: a prospective randomized controlled trial. J Neurosurgery. 2019;130(5):1680-91.

Study location: Sírio Libanês Hospital, São Paulo, SP, Brazil.

Conflict of interest: The authors declare there are none.