

Patients and informal caregivers' questions about alveolar bone graft post-operative care

Dúvidas de pacientes e cuidadores informais relativas aos cuidados pós-operatórios de enxerto ósseo alveolar
Dudas de pacientes y cuidadores informales referentes a los cuidados posoperatorios de injerto oseó alveolar

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ABSTRACT

Objectives: to identify patients' and informal caregivers' questions related to alveolar bone graft post-operative care. **Methods:** analytical and cross-sectional study, developed in a public and tertiary hospital between October 2017 and February 2018. The sample consisted of 46 participants. Data collection occurred during the preoperative nursing consultation through interview. The doubts were described in a form prepared by the researchers and later grouped by similarity of the subject. **Results:** doubts referred to diet (type of food, consistency, temperature and time period), surgical wound care (oral hygiene, graft rejection, removal of surgical points), post-operative complications (bleeding and edema), convalescence period (sun exposure, physical effort, time away from activities, length of stay) and medications. **Conclusions:** identifying the doubts allowed planning and implementing nursing care focused on the real needs of the clientele, favoring the rehabilitation process. **Descriptors:** Nursing; Bone Transplantation; Postoperative Period; Cleft Lip; Cleft Palate.

RESUMO

Objetivos: identificar as dúvidas de pacientes e cuidadores informais relativas aos cuidados pós-operatórios de enxerto ósseo alveolar. **Métodos:** estudo analítico e transversal, desenvolvido em um hospital público e terciário entre outubro de 2017 e fevereiro de 2018. A amostra constou de 46 participantes. A coleta de dados ocorreu durante a consulta de enfermagem pré-operatória por meio de entrevista. As dúvidas foram descritas em impresso elaborado pelos pesquisadores e, posteriormente, agrupadas por similaridade de assunto. **Resultados:** as dúvidas referiram-se a alimentação (tipo de alimento, consistência, temperatura e período de tempo), cuidados com a ferida operatória (higiene oral, rejeição do enxerto, retirada dos pontos cirúrgicos), complicações pós-operatórias (sangramento e edema), período de convalescência (exposição ao sol, esforço físico, tempo de afastamento das atividades, tempo de internação) e medicações. **Conclusões:** identificar as dúvidas permitiu planejar e implementar a assistência de enfermagem voltada às reais necessidades da clientela, favorecendo o processo reabilitador. **Descritores:** Enfermagem; Transplante Ósseo; Período Pós-Operatório; Fenda Labial; Fissura Palatina.

RESUMEN

Objetivos: identificar las dudas de pacientes y cuidadores informales referentes a los cuidados posoperatorios de injerto óseo alveolar. **Métodos:** estudio analítico y transversal, desarrollado en un hospital público y terciario entre octubre de 2017 y febrero de 2018. La muestra ha constado de 46 participantes. La recogida de datos ha ocurrido durante la consulta de enfermería preoperatoria por medio de entrevista. Las dudas han sido descriptas en impresso elaborado por los investigadores y, posteriormente, agrupadas por similitud de asunto. **Resultados:** las dudas se refirieron a la alimentación (tipo de alimento, consistencia, temperatura y período de tiempo), cuidados con la herida operatoria (higiene oral, rechazo del injerto, retirada de los puntos quirúrgicos), complicaciones posoperatorias (hemorragia y edema), período de convalecencia (exposición al sol, esfuerzo físico, tiempo de alejarse de las actividades, tiempo de internación) y medicaciones. **Conclusiones:** Identificar las dudas permitió planear e implementar la asistencia de enfermería vuelta a las reales necesidades de la clientela, favoreciendo la rehabilitación.

Descriptoros: Enfermería; Trasplante Óseo; Periodo Posoperatorio; Labio Leporino, Fisura del Paladar.

INTRODUCTION

The cleft lip or cleft palate are prevalent among the malformations that affect the face. They have multifactorial etiology, including genetic and environmental factors. Nationally, the incidence of 1:700 live births is admitted⁽¹⁾. Individuals with a cleft may present functional, aesthetic, psychosocial, and cognitive problems⁽²⁾.

The fissures may affect, alone or in an association, the lip and the palate. The higher the anatomical impairment, the greater the implications. Cheiloplasty and palatoplasty are the first reparative surgeries. Also, other surgeries may be necessary, depending on the case, such as orthognathic surgery and alveolar bone graft⁽³⁻⁴⁾.

Alveolar bone graft surgery aims at reconstructing the dental arch, closing the nasal fistula, providing support for the alar base, and facilitating the spontaneous eruption of the tooth adjacent to the fissure as with the involvement of the alveolar ridge there is a dental disorder where bone tissue continuity is interrupted by an anatomical defect⁽⁵⁾.

Although there is no consensus on the ideal age for surgery, in most cases, it is from 9 to 12 years. The procedure is performed by scraping the autogenous bone, preferable to the bone marrow rather than the cortical bone, due to the more significant amount of bone cells and its ability to induce growth in the affected area, and the iliac crest is the chosen site due to the amount available bone marrow. However, other regions are considered donor sites, including calvaria, mandibular symphysis, and tibia⁽⁵⁻⁶⁾.

In addition to autogenous bone, bone morphogenetic protein (BMP-2), which has been proven effective, can be used. Also, bone substitutes, such as allogeneic bone and hydroxyapatite^(5,7), are used. However, the type and extent or complexity of the cleft, the eruption of the permanent canines, and the surgeon's expertise are pointed out as influencing the outcome of alveolar bone graft surgery performed with BMP-2⁽⁸⁾. Another therapy used is the use of autologous bone marrow mononuclear cells, combined with platelet-rich fibrin and nano-hydroxyapatite⁽⁹⁾.

The main surgical complications of this procedure include bone graft resorption, wound dehiscence, tissue necrosis, and infection⁽¹⁰⁾. In the postoperative period, patients remain with mastication restriction, may present painful edema and swallow, and it is necessary to restrict the food for consistency, instituting 20 days with a liquid diet, 20 days of pasty, and 20 days of soft diet in small pieces⁽¹¹⁻¹²⁾. The immediate postoperative period (IPO) comprises the first 24 hours after the surgical procedure⁽¹³⁾.

Therefore, the nurse must have extensive knowledge about the care and peculiarities of the various surgeries performed, technical, and interpersonal skills to perform critical thinking and appropriate clinical judgment for decision making. Thus, care should be planned to restore the patient's physiological balance, reducing complications, and increasing the quality of the service provided⁽¹⁴⁾.

Nursing should also provide informal caregivers with training related to the care that involves this type of surgery, so that after hospital discharge, there is continuity of care and, thus, prevention of complications⁽¹⁵⁾.

Given the above, we ask: Which are the main doubts of patients and informal caregivers related to alveolar bone graft post-operative care? To our knowledge, this study is a pioneer in this approach, which emphasizes its relevance.

OBJECTIVES

To identify patients' and informal caregivers' questions related to alveolar bone graft post-operative care.

METHODS

Ethical aspects

The research began after the approval by the Human Research Ethics Committee of the hospital in question, through opinion 2,334,609 and CAAE (Brazil's Certification of Presentation for Ethical Consideration): 73183417.2.0000.5441. Participants 18 years of age and older formalized their membership by signing the Informed Consent Form. Underage patients signed the Consent Form and their guardians, the Informed Consent Form, in accordance with Resolution 466/2012.

Study Design, location, and period

Analytical and cross-sectional study, guided by the STROBE tool, developed between October 2017 and February 2018 in a tertiary public hospital located in the interior of the state of São Paulo, Brazil. It is a national and international reference institution in the care of patients with craniofacial anomalies and related syndromes. It is managed by the University of São Paulo, with resources from the Single Health System (SUS), acting in the assistance, teaching, and research area. The assistance is multi professional and interdisciplinary.

Sample population, selection criteria and definition

The population consisted of patients undergoing alveolar bone graft surgery and their informal caregivers. Inclusion criteria for the patients were: to be in the preoperative period for alveolar bone graft exclusively and to be between 9 and 16 years old. For caregivers, the inclusion criteria were: to be the patient's primary and informal caregiver and to be 18 years of age or older. We excluded informal caregivers who had experience regarding postoperative care for the alveolar bone graft.

According to the monthly average of surgeries and the period of data collection, the sample consisted of 46 participants.

Study Protocol

We performed the data collection during the preoperative nursing consultation, in which the nurse prepares the patient for surgery, including fasting checking, assessment of the patient's general condition, complications in the last 24 hours, previous and current pathologies, medications in use, need for medical evaluation, expectations about the surgical procedure and the main doubts related to the postoperative period. The approach was individual and private. The average duration of the consultation was 20 minutes.

For data collection, we used the structured interview. We prepared a form to describe the doubts which later were grouped by similarity of the subject. Data collection was performed exclusively by the researchers to avoid biases.

Also, we characterized patients and caregivers according to the family level, age, education, marital status, and socioeconomic classification⁽¹⁶⁾.

Results analysis and statistics

We decided to group the doubts to facilitate the presentation of the results. The grouping occurred by similarity, that is, after being identified, the doubts we organized them according to the subject they addressed - for example, those related to diet, which included the type of food, consistency, temperature, among others.

To tabulate the results, we used the Excel program, version 2015, and submitted the results to descriptive statistical analysis, including mean, standard deviation, relative, and absolute frequency.

RESULTS

46 individuals participated in this study, 25 patients, and 21 caregivers. For patients, the mean age was 12 (± 2) years. There was a predominance of males (64%), with incomplete primary education (84%), lower socioeconomic class, and upper (both with 36%).

As for caregivers (n = 21), female (81%) prevailed, with a mean age of 41 years (± 9), completed high school (43%), upper-middle socioeconomic class (52%), with children (95%) and stable union (67%).

Referring to the categories of doubts of the patients, we observed the predominance of diet (60%), oral hygiene, and bleed (both with 36%) (Table 1).

Regarding the caregivers' doubts, there was a predominance of those related to bleeding (48%), diet, and oral hygiene (both with 38%) (Table 2).

When considering the sum of doubts between caregivers and patients, there was a predominance of Diet (50%), followed by bleeding (41%) and oral hygiene (37%) (Table 3).

Table 1 - Distribution of patients' doubts regarding postoperative care for alveolar bone graft surgery, Bauru, São Paulo, Brazil, 2018

Variables	n	%
Diet	15	60
Oral hygiene	9	36
Bleeding	9	36
Physical Effort	6	24
Sun exposure	5	20
Oedema	5	20
Length of stay	3	12
Time away from activities	3	12
Graft rejection	1	4

Table 2 - Distribution of caregivers' doubts regarding postoperative care for alveolar bone graft surgery, Bauru, São Paulo, Brazil, 2018

Variables	n	%
Bleeding	10	48
Diet	8	38
Oral hygiene	8	38
Sun exposure	6	28.5
Oedema	5	24
Physical Effort	4	19
Time away from activities	4	19
Graft rejection	4	19
Medication	3	14
Length of stay	3	14
Suture removal	2	9,5

Table 3 - Sum of caregivers' and patients' doubts regarding postoperative care for alveolar bone graft surgery, Bauru, São Paulo, Brazil, 2018

Variables	n	%
Diet	23	50
Bleeding	19	41
Oral hygiene	17	37
Sun exposure	11	24
Edema	10	22
Physical Effort	10	22
Time away from activities	7	15
Length of stay	6	13
Graft rejection	5	11
Medication	3	6.5
Suture removal	2	4

After the identification of doubts, they were grouped by similarity, resulting in the following themes: Diet (type of food, consistency, temperature and time period), wound care (oral hygiene, graft rejection, stitch removal), postoperative complications (bleeding and edema), convalescence period (sun exposure, physical effort, time away from activities, length of stay) and medications (Figure 1).

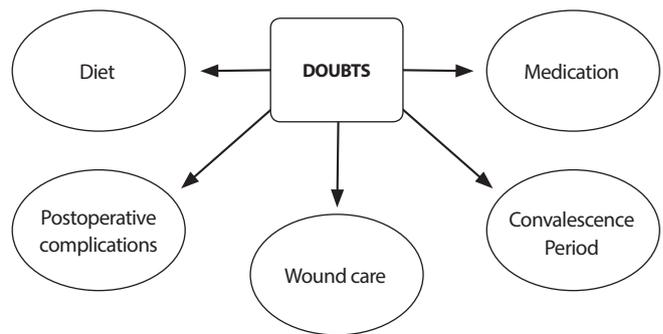


Figure 1 - Themes from the grouping of patients' and caregivers' doubts, Bauru, São Paulo, Brazil, 2018.

DISCUSSION

Concerning the sociodemographic characterization of the patients regarding gender, we observed a predominance of males. In fact, the literature indicates a predominance of cleft lip and cleft palate in men⁽¹⁷⁾. Other investigations have shown similar results^(2-3,11,18).

As for education, incomplete elementary school was predominant, and this result was compatible with the average age (12 years). This finding infers that the possible problems faced by children/adolescents with cleft do not, in most cases, influence school performance, since they are in the sequence where they should be.

The age of the participants in this study was in accordance with the recommended for the alveolar bone graft, i.e., between 9 and 12 years, before permanent canine eruption⁽¹⁰⁾. The older the patients, the worse the surgical results, regardless of the type of cleft⁽¹⁹⁾.

Of the caregivers, women, and mothers prevailed. Different studies have pointed to the prevalence of mothers as primary

informal caregivers of their children^(15,20). Maternal presence during hospitalization strengthens the mother-child bond, minimizes stress, and favors therapeutic success, as these informal caregivers learn about postoperative care, ensuring their continuity after discharge⁽²⁰⁾.

Concerning schooling, high school predominated. Studies infer the higher the education level, the greater the education and, consequently, the understanding of the caregivers about the treatment modalities and the search for their rights. Similarly, this favors the acquisition of home-care skills^(15,20).

Regarding the socioeconomic classification of families, the upper and lower rates prevailed. This finding reflects the profile of patients treated at the institution, who, for the most part, belong to less privileged social classes. Another survey observed a similar result⁽²⁰⁾. It is noteworthy that the alveolar bone graft is costly. In this context, the economically disadvantaged population tends to look for treatment in public institutions. It is also inferred on the prevalence of cleft lip or cleft palate in low-income populations⁽¹⁶⁾.

Among caregivers, the vast majority of them reported being married and having children. The family is identified as of paramount importance to the rehabilitation process⁽²⁰⁾. However, having too many children can compromise care for those who need the most attention.

The presence of the companions, since the preoperative period, is fundamental since, besides receiving the orientations, they offer support to the patient who is often emotionally worn out⁽²¹⁾.

Regarding the grouping of doubts, we listed the following topics: diet, wound care, postoperative complications, convalescence period, and medications. Research to identify the main concerns of informal caregivers regarding postoperative orofacial surgeries included prevention of bleeding, pain control, diet, hydration, surgical incision care, and physical restriction⁽²⁰⁾.

In the theme "Diet," questions were included regarding the food that could be consumed, about their consistency, temperature, and period of change in the diet. In orofacial surgeries, the prevailing concern regarding the postoperative period refers to feeding, which should be liquid, with cold temperature, aiming to avoid damage to the surgical wound and favor healing⁽¹¹⁻¹²⁾.

During postoperative hospitalization, in addition to the homogeneous liquid diet, patients receive dietary supplements. Thus, nursing should monitor food acceptance and work with the nutrition service to ensure that weight loss is as low as possible, considering its influence on postoperative recovery⁽¹¹⁾.

Another theme referred to surgical wound care and included questions regarding oral hygiene, graft rejection, and removal of surgical points. Proper oral hygiene is essential to prevent infections, as the surgical site is located in the oral cavity, which is colonized by microorganisms. These, associated with postoperative convalescence, can lead to infections. Due to edema that worsens from the third to the fourth postoperative day and the fear of injury to the surgical wound, patients are often reluctant to perform proper oral hygiene⁽²²⁾.

Thus, besides brushing, the use of mouthwash is indicated. Patients and caregivers should be made aware of the importance of oral hygiene in the prevention of complications, such as surgical site infection, to minimize the risk of failure of the procedure⁽²²⁾. In this sense, a study identified the establishment of protocols as effective⁽²³⁾.

Among the biomaterials available for alveolar bone grafting, autogenous bone is considered a gold standard because it is not immunogenic and has osteogenic, osteoinductive, and osteoconductive properties⁽²⁴⁾. Although morphogenetic protein is currently available as a substitute for autogenous bone, its acquisition in public health services has been unviable due to its high cost⁽²²⁾.

The failure of this surgical procedure is generally related to the poor surgical technique, i.e., not meeting essential criteria, which include: action to prevent tension of the mucoperiosteal vestibular flap, improper covering of the keratinized gingiva over the graft⁽²⁵⁾, patient age, gender, cleft type, and postoperative complications⁽²⁶⁾.

For surgical suture, stitches that are resistant to the traction of the surgical wound are used, since, besides providing low tissue reactivity and being absorbable, they need to be removed⁽²⁷⁾. Another theme of doubts referred to possible postoperative complications, which included bleeding and edema.

Concerning bleeding, the doubts were related to the risk of happening, the triggering situations, and the measures to stop it. The risk of bleeding, although inherent in any surgical procedure, is minimal and usually relates to trauma to the surgical wound. To a lesser extent, prolonged inadvertent sun exposure can trigger bleeding⁽²⁰⁾.

Thus, ice packs on the face, use of cold saline in the nostrils, and ingestion of cold liquids can minimize this risk. However, in cases where bleeding is most significant, the patient should receive immediate medical attention⁽²⁰⁾.

Referring to edema, it usually forms from impaired lymphatic flow, or it is associated with changes in absorption and transport of plasma proteins⁽²⁸⁾. It hinders mouth opening and is related to the incidence of postoperative pain, possibly by compressing adjacent innervations⁽²⁹⁾. Thus, functions such as chewing and swallowing may be altered, causing poor food acceptance and, consequently, weight loss and susceptibility to postoperative complications⁽³⁰⁾.

The edema is more pronounced on the third and fourth postoperative day^(24,31). In this sense, cryotherapy is indicated, which aims to slow down cellular metabolism, in addition to providing vasoconstriction and blockage in nerve endings, minimizing edema and pain⁽³²⁾. Other therapies are recommended, including lymphatic drainage and laser application^(31,33).

Studies also emphasize that edema is directly related to the patient's self-image by altering the morphology of the face⁽²¹⁾, and its complications, proportion, and severity correlate with other symptoms that may manifest physically, psychologically, or emotionally⁽³⁴⁾. Although one of the main reasons for performing this surgery is related to the aesthetic results, mainly because they are adolescents, they are not observed in the short term⁽³⁾.

Concerning the convalescence period, doubts related to sun exposure, physical effort, time away from activities, and length of stay were included. Regarding sun exposure, it is important to avoid for at least 30 days, as this can be a triggering factor for bleeding through vasodilation, in addition to contributing to the accentuation of edema.

As for physical effort, the participants questioned the activities that they could perform after surgery, as well as about the period that they should avoid physical effort. In the scenario institution of this research, it is recommended that after hospital discharge, patients remain for 30 days without physical effort; that is, they

can perform their daily life activities, such as self-care, but intense physical activities are prohibited. Thus, the suspension of activities such as work and school should be approximately 15 days.

About the period of hospitalization, it is routinely 48 hours, although hospital discharge after 24 hours of the surgical procedure is possible.

Another issue of doubts referred to the medications used postoperatively, which include: antibiotics, analgesics, anti-inflammatory drugs, corticosteroids and antiemetics, opioids being sporadically necessary. Postoperative pain is the most prevalent discomfort and results from several factors, such as edema, surrounding muscle stiffness, and peripheral soft tissue contraction. Thus, all these events can cause pain⁽³⁵⁾.

Research has shown no difference in pain threshold between females and males, except for age, where it showed that older men had a more significant reduction in the pain visual analogue scale on the second postoperative day, probably because men exhibit higher cognition and pain tolerance as they get older⁽³⁶⁾. Thus, nursing should systematically monitor postoperative pain^(13,23).

Study limitations

They include their monocentric feature and cross-sectional design, which make it impossible to generalize results and not allow cause and effect assessments.

Contributions to the nursing area

We believed that this research would help to resolve the doubts of patients and their caregivers regarding the postoperative period of alveolar bone graft, favoring the rehabilitation process and minimizing possible complications, besides supporting hospital discharge plans to contribute to the maintenance of the patients home care.

Also, considering the decentralization of care in the health system, which includes performing this surgery in different contexts, we expected that the knowledge signed here could help health professionals who assist these patients.

CONCLUSIONS

The caregivers' and patients' doubts regarding the postoperative period of alveolar bone graft were related to diet, wound care, postoperative complications, convalescence period, and medications.

Identifying the doubts allowed planning and implementing nursing care focused on the real needs of the clientele, favoring the rehabilitation process. We believed that, by identifying and solving doubts, nurses contribute to the postoperative recovery process by minimizing surgical stress and preparing both patients and their caregivers for hospital discharge, in addition to promoting the maintenance of home care.

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