

Complications and cares related to the use of the gastrostomy tube in pediatrics

Complicações e cuidados relacionados ao uso do tubo de gastrostomia em pediatria

Complicaciones y cuidados relacionados al uso del tubo de gastrectomía en pediatría

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ABSTRACT

Objective: To describe the complications and cares related to the use of the gastrostomy tube. **Method:** A descriptive and exploratory study, with a qualitative approach, performed with 15 mothers of gastrostomized children attended at the Specialized Service in Wounds, Stomas and Incontinence. To obtain the data, it was used an interview with semi-structured script composed by the participants identification and two guiding questions. For the analysis, the thematic type content analysis technique was used. **Results:** The most frequent complications were accidental tube outlet, hyperemia, granuloma, gastric residue leakage, balloon rupture and ostium enlargement and closure. **Conclusion:** Gastrostomy care is indispensable for patients, since its guarantee the safety of the procedure, without the risk of complications. The nurse has a responsibility and a privileged position on these patients, since to work with the gastrostomized child is to build a close and collaborative relationship with the child and the family and to contribute to the scientific enhancement and the improvement in the quality of nursing care, thus favoring a partnership between the team of professionals and the family.

DESCRIPTORS: Stomatherapy; Gastrostomy; Nursing care; Pediatrics

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RESUMO

Objetivo: Descrever as complicações e os cuidados relacionados ao uso do tubo de gastrostomia. **Método:** Estudo descritivo e exploratório, com abordagem qualitativa, realizado com 15 mães de crianças gastrostomizadas atendidas no Serviço Especializado em Feridas, Estomias e Incontinência. Para obtenção dos dados, utilizou-se uma entrevista com roteiro semiestruturado composta pela identificação das participantes e duas perguntas norteadoras. Para análise, utilizou-se a técnica de análise de conteúdo do tipo temática. **Resultados:** As complicações mais relatadas foram saída acidental do tubo, hiperemia, granuloma, vazamento de resíduo gástrico, rompimento do balão e alargamento e fechamento do óstio. **Conclusão:** Os cuidados relacionados à gastrostomia são indispensáveis aos pacientes, pois garantem a segurança do procedimento, sem risco de complicações. O enfermeiro tem uma responsabilidade e uma posição privilegiada sobre esses pacientes, pois trabalhar com a criança gastrostomizada é construir um relacionamento estreito e colaborativo com a criança e a família e contribuir para o aprimoramento científico e a melhoria na qualidade da assistência de enfermagem, favorecendo assim uma relação de parceria entre a equipe de profissionais e a família.

DESCRIPTORIOS: Estomaterapia; Gastrostomia; Cuidados de enfermagem; Pediatria

RESUMEN

Objetivo: Describir las complicaciones y los cuidados relacionados al uso del tubo de gastrectomía. **Método:** Estudio descriptivo y exploratorio, con enfoque cualitativo, realizado con 15 madres de niños gastrectomizados atendidos en el Servicio Especializado en Heridas, Ostomías e Incontinencia. Para la obtención de los datos, se usó una entrevista con informe semiestructurado compuesta por la identificación de las participantes y dos preguntas orientadoras. Para análisis, se usó la técnica de análisis de contenido de tipo temática. **Resultados:** Las complicaciones más relatadas fueron la salida accidental del tubo, hiperemia, granuloma, fuga de residuo gástrico, rompimiento del globo y alargamiento y cierre del ostio. **Conclusión:** Los cuidados relacionados a la gastrectomía son indispensables para los pacientes, pues garantizan la seguridad del procedimiento, sin riesgo de complicaciones. El enfermero tiene responsabilidad y una posición privilegiada sobre estos pacientes, pues trabajar con un niño gastrectomizado es construir una relación cercana y de colaboración con el niño y la familia y contribuir para la perfección científica y la mejora en la calidad de la asistencia de enfermería, favoreciendo así una relación de sociedad entre el equipo de profesionales y la familia.

DESCRIPTORIOS: Estomaterapia; Gastrectomía; Cuidados de enfermería; Pediatría.

INTRODUCTION

Stoma is a surgical opening of a hollow organ forming a “mouth” that maintains contact with the external environment. Depending on the location in the body, the stomas are given several denominations, and can be classified into: tracheostomies, when made in the respiratory tract; nephrostomies, ureterostomies, cystostomies and vesicostomies, when in the urinary system; colostomies and ileostomies, when in the intestinal tract; esophagostomies and gastrostomies, when in the digestive tract¹.

Gastrostomy, the subject of this study, is defined as a surgical procedure that allows access to the gastric chamber through the artificial wall of the stomach². It can be introduced endoscopic, radiologic, laparoscopic or by laparotomy³. These last two access ways require general anesthesia, requiring an increase in the patients' hospitalization time and, consequently, raising the economic costs for the institution. This also allows for conditions that can lead to associated morbidity and mortality³.

Currently, the procedure of choice for the provision of enteral support is percutaneous endoscopic gastrostomy

(PEG), which presents a low rate of complications⁴. Such a procedure provides a safe way for prolonged enteral feeding, especially in neurological diseases, head and neck disorders and myopathies and congenital anomalies in the oropharynx or larynx, with normal gastrointestinal tract (cleft palate and Pierre Robin syndrome)⁵. It can also be used as a gastric decompression way, being indicated in these cases, primarily, to patients with advanced abdominal tumors that cause chronic intestinal obstruction.

In children, gastrostomies are usually temporary and are mainly performed in intestinal obstructions, congenital malformations and trauma⁶. The necessity for a stoma in the child modifies the entire family structure, with the mother being most responsible for the care, being constantly present in the evolution of the health of her child. On the other hand, her private life ends up being impaired, as well as her professional life, with the abandonment of her projects and works to dedicate to the cares with the child in integral form⁶.

However, nursing care is fundamental to the gastrotomized child and its family, since it is necessary to explain the procedure, the choice of the place and the demarcation of the stoma, since these behaviors alone

generate an emotional overload in the patient and in the relatives⁷.

OBJECTIVE

Considering the complexity of gastrostomized patient care, as well as the work of nurses seeking early rehabilitation, this study aimed to describe the complications and cares related to the use of the gastrostomy tube, since these complications indicate the start point for the nursing care planning and the occurrence reduction of adverse events.

METHODS

Descriptive and exploratory study, highlighting the characteristics of the population or phenomenon investigated, identifying probable relations between the variables⁸. It was adopted a qualitative approach that allows the investigation of focus groups, social experiences from the point of view of the participants, besides having a theoretical basis, allowing the deepening in social issues in little known groups and offering subsidy for the construction of new approaches, concepts and hypotheses during the investigation⁹.

It was developed in a public hospital, reference in pediatrics, in the Health State Department of Ceara, with mothers/caregivers of gastrostomized children. Two inclusion criteria were used: to be the main caregiver of the child and to have a register of promptuary in the institution. We excluded the caregivers who attended the outpatient clinic with their children for definitive withdrawal of the gastrostomy tube due to medical discharge.

The study was realized with 15 caregivers, during the care of their children in the Specialized Service in

Wounds, Stomas and Incontinence, in the period between June and July 2016. To obtain the data, we used an interview with semi-structured script composed of data from identification and sociodemographic characteristics of the participants, as well as two guiding questions.

The interviews were realized individually, explaining the purpose of the study, and after accepting to participate in the research, the participants signed the Informed Consent Term. It should be emphasized that the interviews were recorded, with a duration of approximately 10 minutes, and later transcribed, constituting the corpus of the research.

The analysis was systematized according to the technique of thematic content analysis¹⁰. Participants were identified by the letter "C", referring to the "caregiver" followed by the Arabic numeral (1,2,3...15) according to the increasing order of the interviewees.

The research was approved by the Research Ethics Committee of the hospital where the research was developed under number 1.580.334, in accordance with Resolution 466/12, which deals with research with humans¹¹.

RESULTS

Fifteen participants aged between 22 and 49 years were interviewed, being the motherhood the degree of parentage with the child. Regarding the schooling of the participants, six had completed elementary school, five had incomplete primary school and two had incomplete higher education.

In relation to the professional area, 12 were from the home life, two were domestic and one was a farmer. As for the home care aid, nine reported aid provided by their husbands, daughters, maternal grandmothers and cousins.

Of the gastrostomy care before surgery, only eight reported having received guidelines. Of these, five

Table 1. Distribution of complications due to the use of the gastrostomy tube in children mentioned by the mothers.

Complications	Cases Number found	Participants
Accidental tube outlet	10	C1, C4, C5, C7, C8, C9, C11, C13, C14, C15
Hyperemia	4	C1, C2, C3, C6
Granuloma	2	C5, C6
Gastric residue leakage	2	C4, C6
Balloon rupture	2	C10, C12
Ostium enlargement	1	C9
Ostium closure	1	C8

were performed by the nurse. Three mothers reported receiving guidance from the doctor and one from the phonoaudiologist.

All the mothers participating in the study reported complications that occurred in the care of their children, and it was observed that some patients had more than one complication, as shown in Table 1.

The levels of complications incident to the use of the gastrostomy tube usually require only conservative treatment, without the necessity for surgical intervention or hospitalization. Therefore, through the speeches, the mothers expressed how they experienced the complications arising from the use of this tube by their children.

[...] the first time that he ripped I was desperate. I thought that the boy was going to die (laughs) [...] then I came here (hospital) fast, running. He was newborn. A few days ago he had come home and he was very excited [...] it had not blown the balloon and the whole probe came and I was desperate. - (C1)

As reported, caregiver C1 demonstrated insecurity in home care regarding the accidental tube outlet and it was observed in the study that the misinformation about the handling and the replacement of the device still causes astonishment and fear in the mothers.

Caregiver C3 reporting “when it is red” refers to hyperemia of the skin caused by the gastric contents leakage in contact with the skin, which is slightly acidic. The C6 mother’s concern about the appearance of the skin due to pruritus and leakage of liquids caused by feeding in the stomach was also observed, according to the statements:

[...] the cares and cleansing I do. When it’s red I bring it here (hospital). - (C3)

[...] until today, I suffer. The itch that gives the “orifice” (referring to the ostium), which has bleeding [...] in relation to the food also usually leaks and gets these granulomas. She moves a lot, becomes loose and it happens this leaking fluid from the stomach that burns the skin and becomes unbearable. - (C6)

In clinical practice, the sensation of pruritus is related to leakage of liquids, which may be associated with an infection at the place of the gastrostomy or fungal infection developed

by the humid environment, and the maintenance of clean and dry skin is adequate.

In relation to this complication, the doubts and concerns in the speech of C5 were highlighted, identifying it as “flesh”.

[...] when I had that flesh I went to the pharmacy and the pharmacist gave me an ointment that I used and it was good. - (C5)

Another emerging concern of the mothers was related to the difficulties and complications with the device when they were in their homes, which was reported in the following speeches:

[...] the first time it left, it left suddenly (referring to the tube) [...] everyone was crying because they thought that it was something out of this world. Then when I came (to the hospital) changed and ready. Everything was fine, but is not very good. - (C7)

[...] the greatest difficulty was when the hole closed and it was necessary to go to the Surgical Center to open it. When the probe came out I tried to put it back, but the hole capped. - (C8)

[...] the greatest difficulty is first when it leaves, when it left I was nervous, I am very careful, because where I live does not have the care that has here (Fortaleza), so I have to immediately run to here. - (C9)

The mothers expressed fear in the handling of the device and the difficulties faced by the absence of hospitals and health professionals who handle the manipulation and the complications related to the gastrostomy, subjecting them to long hours of travel with their children in search of care. It was also observed how these mothers develop handling and problem solving skills, facing fear and empowering the child, as reported:

[...] I’m afraid of it so break up, he can pull it as it already done. I despaired, but at the moment I had to control myself ... I put on a glove, put it all back again. The balloon burst and I nailed it with micropore, then I came to the hospital (referring to the study hospital) with him to be able to change because where I live nobody knows how to move the probe. - (C10)

However, it has been observed that the mothers of the study often acquire skills with other mothers who also have gastrostomized children for a longer period of time, as reported:

[...] the balloon burst, I got worried, and crying ... when I arrived, the probe was no longer in his belly. Then I knew a girl and she put it in, we did not even know it was to put more we put it and brought it here. - (C12)

DISCUSSION

As observed in the speeches of the 15 participants, the accidental tube outlet was the most reported occurrence, followed by hyperemia, granuloma, gastric residue leakage, balloon rupture, enlargement and ostium closure.

It is noteworthy that ten mothers reported on the accidental tube outlet, stating that they sought the hospital service for the replacement. Accidental tube exteriorization is a complication that can become severe in these patients due to the risk of peritonitis or cellulitis, especially in the first months of use, so it is necessary to use the health services to replace the tube or treat secondary complications¹².

Two mothers reported on gastric residue leakage through the ostium. This complication can cause peristoma skin dermatitis. In this way, the first step of care is to identify and correct the source of this leak. Application of skin protector or barrier cream is recommended. It is also possible to use a protective skin powder for the stoma, in order to dry the exudative skin and to facilitate the application of barrier cream, or to use compresses or daily protectors to absorb the leaks, being careful to change whenever they are dirty or moist, and use cortisone cream³.

In this research, one reported complication that brought concern and fear was the appearance of granuloma. The presence of the moist environment favors the development of this tissue and is also called hypergranulation tissue¹³. It is a much vascularized tissue and therefore has frequent bleeding. It is associated with the proliferative phase of the healing process, since many capillaries are formed at the place of gastrostomy and its orifice and the presence of a yellowish or greenish secretion formed by devitalized cells¹³. In this way, the local gastrostomy should be kept dry, which translates into golden rule for healthy skin.

The conduct adopted for the appearance of granuloma is cauterization with silver nitrate in baton, two to three times a week, being careful to protect the peristome skin with the use of oil or barrier cream, to prevent spots around. The place should not be wet for 24 hours. It is also recommended the use of 20% NaCl hypertonic gel¹³.

Four mothers reported complications on the skin, naming them as “red” and “burning skin”. In the literature, this refers to hyperemia, which is a complication characterized by an inflammatory reaction in the skin and is often associated with the gastric contents leakage³. The conduct to treat these injuries on the skin is the same as for the tube leakage.

Another complication reported by a mother was the ostium enlargement, being translated by the word “loose” in the caregiver’s language. In this situation, it is noted that the enlarged part of the catheter is not in contact with the anterior gastric wall, so it is necessary to fix the catheter to prevent its displacement. When it has this enlargement, uncontrollable leakage occurs and removal of the tube is recommended for a period of 12 to 24 hours, pending contraction of the ostium to an appropriate diameter. The measure taken in this case is to cauterize the inside of the orifice with silver nitrate in baton³.

Two mothers reported that they had the tube balloon rupture, translated in their language as “the balloon burst.” The conduct to be performed is the hygiene of the tube and its immediate replacement, to avoid the ostium closure. The blown balloon may be replaced to prevent closure of the fistulous tract until another³.

Thus, the nurse’s role with gastrostomized patients assumes an essential position, since this provides a specialized care for both the patient and the family. This care relationship begins in the in-hospital environment between the child, the caregiver and the professionals, from the preoperative to the discharge of the child to it home.

Care related to gastrostomy is indispensable for patients, since they guarantee the safety of the procedure, without the risk of complications. The management of the device used by gastrostomized children is very challenging for families, since the relationship with these children is difficult for both parents and other relatives and health professionals¹⁴. Through the reports of the participating mothers, it was noticed that the presence of the device causes fear and insecurity, especially in the first care.

In addition, it has been observed that studies are still insufficient on the nursing care of pediatric gastrostomized

patients, especially the specific care for prevention and improvement in existing complications. As a contribution, the present study can promote the dissemination of acquired knowledge, mainly to the mothers of gastrostomized children and nursing professionals who work with this population.

CONCLUSION

Working with gastrostomized children is to build a close and collaborative relationship with the child and the family and contributes to scientific improvement and improvement in the quality of nursing care, favoring a partnership relationship between the professional staff and the family.

It is up to the nurses to interact and plan the guidance of the multidisciplinary team and the family, building a collaborative relationship in the teaching of gastrostomy

tube care. The aggregation of the experience lived by the family to the nursing assistance allows this assistance to be continued at home, making everything that has been taught and learned in the hospital environment can be perpetuated in the extra-hospital environment.

However, due to the scarcity of this topic in the literature, it is evident the necessity for new research on the subject that will subsidize the assistance to gastrostomized patients.

AUTHOR'S CONTRIBUTION

Conceptualization, Rodrigues LN; Silva AMO and Xavier MS; Methodology, Rodrigues LN; Silva AMO and Chaves EMC; Writing - First version, Rodrigues LN; Silva AMO; Xavier MS and Chaves EMC. Writing-Review & Editing, Rodrigues LN and Chaves EMC; Supervision, Chaves EMC.

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