

Complications of port a cath catheter: subsides for nursing care

Complicações do cateter port a cath: subsídios para os cuidados de enfermagem.

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RESUMO

O Sistema Único de Saúde deve estar orientado e capacitado para a atenção integral à saúde do paciente oncológico. Sendo assim, houve o despertar em apreender as complicações clínicas que levavam à retirada do cateter port a cath. Traçamos como objetivos: descrever as complicações que levam a retirada do cateter port a cath no paciente oncológico; analisar as complicações que levam à retirada do cateter port a cath no paciente oncológico, trazendo subsídios para os cuidados de enfermagem. O método apresenta-se como pesquisa documental, de caráter quantitativo e natureza descritiva e retrospectiva de dados extraídos de prontuários, através de um instrumento de coleta de dados. No desdobramento dos achados das complicações relatadas referentes ao cateter port a cath, empregou-se a análise de estatística descritiva e a infecção foi a principal complicação. Conclui-se que o impacto do resultado da pesquisa poderá promover a melhoria da assistência, maior disponibilidade para as mudanças de atitude e comportamento da equipe de enfermagem.

Palavras-chave: Cateteres Venosos Centrais; Infecções Relacionadas a Cateter; Enfermagem Oncológica.

ABSTRACT

The Unified Health System (SUS) should be oriented and trained to provide comprehensive health care for cancer patients. Thus, there was an awakening in learning about the clinical complications that led to the removal of the catheter port a cath. The goals of this research are: to describe and analyze the complications that lead to the removal of the port to cath catheter in cancer patients, bringing subsidies to the nursing care. Documentary, quantitative and descriptive research of data extracted from medical records through an instrument of data collection. In the unfolding of the findings of the reported complications related to the port a cath catheter, the analysis of descriptive statistics was used, and infection was the main complication. The impact of the research result may promote improved care, greater availability for changes in attitude and behavior of the nursing team.

Keywords: Central Venous Catheters; Catheter-Related Infections; Cancer Nursing.

NOTA

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INTRODUCTION

The port a cath catheter is a siliconized rubber device whose distal end attaches to a puncturable camera, which remains under the skin, embedded in a store in the subcutaneous tissue of the thoracic region, on a bone surface. It is implanted by a surgical procedure and is usually well accepted by patients because it does not require home-based care and has minimal interference with self-image, since the device is not externalized; however, percutaneous puncture is still required ⁽¹⁾.

This catheter, in addition to offering greater functional comfort, presents a lower infection rate when compared to other catheters available. Aesthetically, it is considered ideal for patients requiring the use of intermittent and prolonged systemic chemotherapy ⁽²⁾. The fully implantable catheter minimizes the risk of thrombosis, is of easy puncture, allows outpatient treatment, is radiopaque, does not interfere with the patient's daily activities, and preserves the peripheral venous system ⁽³⁾.

Indications for fully implanted catheter implantation are: administration of chemotherapy, hemoderivatives, antibiotics, parenteral nutrition, analgesics, and frequent need for blood sample collection. Currently, more and more oncological and hematological patients use this type of device ⁽⁴⁾.

Despite the great utility of these catheters, their insertion and maintenance are not free of complications ⁽⁵⁾. Because they allow prolonged use, they also facilitate the occurrence of complications during this period, such as infection, extravasation, obstruction, thrombosis, bruising and catheter displacement ⁽⁶⁾. They present various complications related to their implantation, manipulation and maintenance. Infection in long-stay catheters is a complication of high morbidity and mortality, with additional risks and complications in patients who are often debilitated or immunosuppressed, such as those submitted to chemotherapy ⁽⁷⁾. The practice of sanitation in health services has been widely studied for its proven benefit in reducing the rates of infections associated with health care, however, the low adherence to this measure remains an alarming problem ⁽⁸⁾.

It is estimated for Brazil in the biennium 2018-2019, the occurrence of 600 thousand new cases of cancer, for each year ⁽⁹⁾. Therefore, in view of the significant number of incident cancer cases, the SUS should be oriented and enabled to provide comprehensive health care for the cancer patient, in a perspective that contemplates the health promotion, the health needs of the population with cancer, the control of the most serious complications in this group and the guarantee of the right to health.

In view of the above, we outline the complications of the port a cath. In order to obtain the results, we draw the following guiding questions: What are the complications that lead to withdrawal of the port to cath in the cancer patient?; What is the role of nursing in the face of the complications that lead to withdrawal of the port a cath? To reach the object of study, we define the following objectives: describe the complications that lead to the withdrawal of such catheter in the cancer patient; to analyze the complications that lead to this withdrawal, bringing subsidies to nursing care.

METHOD

We chose documentary and retrospective research in medical records, describing the phenomena, and establishing correlations or verifying the probabilistic frequency of their occurrence ⁽¹⁰⁾.

The retrospective study is carried out from past records and is followed from that moment until the present ⁽¹⁰⁾. It is fundamental that there is credibility in the register data to be computed, in relation to the exposure of the factor and / or its intensity ⁽¹¹⁾.

The method is presented as documentary research, with a quantitative character and a descriptive and retrospective nature of data extracted from medical records, through an instrument of data collection, whose purpose is to describe a phenomenon or situation, through a study carried out in a certain space-time ⁽¹²⁾. We use Minayo's theoretical concepts, which works with the universe of meanings, motives, aspirations, beliefs, values and attitudes, which corresponds to a deeper space of relationships, processes and phenomena that cannot be reduced to the operationalization of variables ⁽¹³⁾.

The study was conducted at the Federal Hospital of Bonsucesso, a reference for oncologic treatment. Ethical issues were met in accordance with Resolution 466/2012 of the National Health Council. In order to meet and comply with the ethical standards determined by this resolution, this study was submitted to the normative procedures of CEP UNIRIO under the number of CAEE 57032616.2 .0000.5285 and number of Opinion 1,700,761 and CEP of the Federal Hospital of Bonsucesso under the number of CAEE 57032616.2.3001.5253 and number of opinion 1,764,235, setting up approval of the reviewers of these Committees.

Inclusion criteria: have implanted a fully implanted device between 2014 and 2016 and people who are or are not currently being treated (at the time of data collection). Exclusion criteria: patients outside the above mentioned timeframe and who do not have in their records of the Medical File the Operative Bulletin of port a cath implantation.

From the issue of the list of surgeries for implantation of catheter port a cath in 2014, 2015 and 2016 by the secretariat of the Surgical Center, 93 patients were found. We also analyzed the daily map of the chemotherapy sector within the time frame of the research and found 92 catheter implantations port a cath. Thus, a total of 185 patients with catheter placement were obtained. After verification of the 185 charts, only 137 met the criteria for inclusion in the survey: 38 cat-to-cat catheter implantations in 2014; 46 deployments in the year 2015; 53 deployments in the year 2016.

Therefore, for these 137 charts, the data collection instrument was applied, through the complete reading of each medical record, supporting the proposed theme and responding to the research objectives. For the identification of the charts in the research, a coding of the instruments was established in an alphanumeric sequence, where the letter "A" corresponds to the year 2014, the letter "B" to the year 2015 and the letter "C" to the year 2016; and after the organization of the years, the order of the instruments was established by a numeral. For the identification of the four surgical clinics that performed the implantation of the catheters port a cath, the alpha sequence: "W" was used; "X"; "Y"; and "Z".

The Oncology Sector has an exclusive medical record for each patient, regardless of the medical file already in the Medical File. From a search of 137 charts of the Oncology Service, only 111 were found in the Archives of the Oncology Sector Secretariat, and 26 records were not located (A2, A9, A16, A16, A17, A25, A27, A29, A30, A37, B1, B3, B3, B15, B18, B19, B20, B27, B28, C3, C4, C17, C20, C23, C26, C32, C40). We performed the reading and analysis of charts found in Oncology, and the information pertinent to the research was complementary to the respective data collection instrument for each patient.

Then, to facilitate and understand the analysis, the data were distributed in a table in the Microsoft Excel 2010 Program according to all the variables inserted in the data collection instrument.

In order to obtain the results, we used the descriptive statistics analysis, which aims to describe the data, whether of a sample or a population. It may include: verification of representativeness or lack of data; data ordering; compiling the data into a table; creating graphs with data; calculate summary values, such as averages; functional relationships between variables⁽¹⁴⁾.

To base this research for analysis and discussion of the results, the scientific production of articles dealing with the topic of oncology care was published, published in the VHL databases, dissertations and theses, among others.

RESULTS

Regarding sex, 58.4% (n = 80) of the catheter a port catheter implantations were performed in women, while 41.6% (n = 57) of the implants were performed in men. The results showed a predominantly adult age group, evidencing the number of elderly. There was a higher prevalence in the age range of 56 to 60 years, representing 18.9% (n = 26).

In relation to the surgical clinics that performed the port a cath catheter implantations, the "W" Clinic with 49.6% (n = 68) was the Surgical Clinic that performed the most implantations during the time frame of the research, being in 2016 the year in which there were more implantations with 38.7% (n = 53). As a diagnosis for each patient, the analysis of the research revealed 19 types of cancer, being colon cancer with a prevalence of 37.2% (n = 51). However, 63 (46%) patients presented with metastasis, being important to note the occurrence in liver (n = 41) and lung (n = 16). In view of the pre-existing pathologies to the implantation of the catheter port a cath, 73 (53.3%) reported positively, evidencing Systolic Arterial Hypertension (n = 58) and Diabetes Mellitus (n = 23).

The clinical indications "Neoadjuvant chemotherapy / adjuvant" (n = 15) and "Peripheral vascular access failure" (n = 11) were the most reported. Regarding the prevalence of the date of implantation, in 2014 27.6% (n = 38) of implantations were performed; in 2015, 33.4% (n = 46); in 2016 38.6% (n = 53) were performed.

For the implantation of the catheter, two veins were reported: subclavian and internal jugular. The subclavian vein was punctured in 122 patients, representing 89% of the implantations, 78.8% (n = 108) with right subclavian location, 9.5% (n = 13) in the left subclavian and 0.7 n = 1) without specifying which subclavian. While the internal jugular vein was mostly located on the right, with 7.3% (n = 10). In 3,6% (n = 5) of the medical records, the port of catheter implantation vein was not informed. For all 137 port a cath catheter implants performed at the surgical center, local anesthesia was administered.

Of the 137 implantations, 28 (20.4%) had clinical complications, according to Figure 1, with 17.8% (n = 5) in 2014, 50% (n = 14) in 2015 and 32.1% (n = 9) in the year of 2016. Regarding the Surgical Clinic, 42.8% (n = 12) of the implantations were performed by the Clinic "W", 53.6% (n = 15) X "and 3.5% (n = 1) of the implantations were performed by Clinic "Z".

According to Figure 2, in view of the clinical complications found during the analysis of the research, it was possible to describe the respective care behaviors.

FIGURE 1 – Presentation of the clinical complications before catheter implantations port a cath. Federal Hospital of Bonsucesso, Rio de Janeiro, 2018

Complicações apresentadas	n
Infecção do cateter	14
Disposicionamento de cateter	5
Apresentação de quadro clínico com febre	5
Ausência de fluxo e refluxo ao puncionar cateter	3
Pneumotórax	2
Ausência de progressão na implantação do cateter	2
Abaulamento em região infraclavicular	2
Extravasamento de quimioterapia	2
Trombose	1

FIGURE 2 – Presentation of the clinical complications before the implantations of catheter port a cath with their respective conducts assists and executions referenced. Federal Hospital of Bonsucesso, Rio de Janeiro, 2018.

Complications	Conducts	Execution
Catheter Infection	- Interrupted use of the port a cath, and administered peripheral vein chemotherapy;	A23, B22, C6 e C31;
	- Performed Leukogram;	B11;
	- Not withdrawing the catheter;	A23, B4, B32 e C6;
	- Delivery of catheter culture performed;	B3 e B26;
	- Made Hemoculture;	B3 e C32;
	- Local compressive dressing, peripheral puncture and beginning of Vancomycin;	B3 e B26;
	- Catheter withdrawal port a cath;	B3, B11, B22, B26, B27, B39, C16, C31, C32 e C33;
	- Oriented patient to perform local antiseptis with 70% alcohol;	B4, B32 e B39;
	- Made notification to risk management and prescribed Cephalexin for 7 days;	B11 e C6;
	- Prescribed Ertapenem 5ml in loco;	B26;
	- Prescribed Ceftazidime 2g IV for three days via catheter;	C16;
- Prescribed Clavulin for 10 days.	C31.	
Catheter Arrangement	- Performed ultrasonography in infraclavicular region and warm water compress for pain relief, catheter removed from the catheter of the right subclavian vein, punctured a new catheter in the left subclavian vein and made possible the patient's hospitalization for analgesia;	A37;
	- Reassignment of the catheter by not withdrawing it;	B10;
Presentation of clinical picture with fever	- Performed peripheral puncture and removed catheter.	B11, B22 e C41.
	- Interrupted the use of the port a cath, administered chemotherapy by peripheral vein, carried out leucogram and not withdrawn the catheter;	A23 e A38.
	- Administration of Novalgina;	A38 e B11;
Presentation of clinical picture with fever	- Requested the removal of the catheter.	B11, B26 e C32.
	- Made contact with the General Surgery, and it evaluates and releases chemo via catheter;	B23;
	- Suspended chemotherapy, performed chest X-ray and catheter removed.	C29.

Pneumothorax	- Requested hospital admission and computed tomography of the chest, performed thoracic drainage in water seal. Subsequently, catheter port a cath flowing and refluxing, released chemo.	C1 e C27.
No progression of catheter implantation	- Right subclavian vein catheter removed and successfully punctured in right internal jugular vein;	B14 e B15.
Infraclavicular region ablation	- Interrupted chemotherapy and patient referred for General Surgery;	A15.
Extravasation of chemotherapy	- Recovered catheter port to catheter of right subclavian vein, punctured new catheter into left subclavian vein and made hospital admission for analgesia;	A37.
	- Released chemo by General Surgery.	B23.
Thrombosis	- Required removal of catheter port to ca	B36.

However, no records were found in records of care practices in A34 and B13.

After presenting complications and conducting pertinent procedures, only 53.6% (n = 15) of the catheters were removed. The time (in days) with the catheter port a cath of the implantation until its withdrawal was observed and analyzed. Only one medical record did not inform the withdrawal date, making it impossible to count the days of this variable. The shortest time with the implantation catheter until its withdrawal was observed in "B14" (1 day), the longest time was ascertained in "B26" (480 days). Thus, it was possible to find a mean time of 99 days with the catheter port a cath of the implantation until its withdrawal by complications.

In this study, 29 deaths were observed in 137 patients with a catheter-to-cath catheter implantation from 2014 to 2016. Of the 38 implantations performed in 2014, 11 (28.9%) deaths were found in this group of patients, with a mean of 273 days from implantation to death; of the 46 deployments performed in 2015, 16 (34.7%) deaths were found in this respective group of patients, with a mean time of 176 days from implantation to death; and of the 53 deployments carried out in 2016, 2 (3.7%) deaths were found in this respective group, with a mean time of 182 days from implantation to death. According to Figure

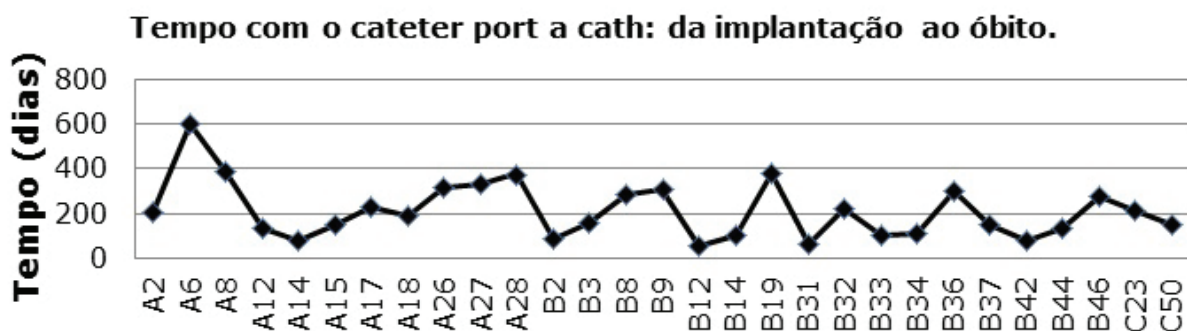
3, from the analysis of the three years (2014 to 2016), the shortest time from the implantation catheter to death was observed in "B12" (55 days), and the longest time was ascertained in "A6" (605 days). Thus, it was possible to find a mean time of 213 days with the catheter port a cath from implantation to death.

DISCUSSION

In view of the results, evidence was sought in the literature to develop a scientific contribution to the conducts performed through the complications presented.

In the presentation of a clinical picture with fever, a clinical examination of the skin should be performed: observe the area of catheter insertion; peripheral blood and catheter sage blood cultures; complete blood count; biochemistry; chest x-ray: if there are signs and / or symptoms of airway or pulmonary comorbidities; withdrawal of CVC in the presence of catheter tunnel infection or periport region (15). Perform type I urine examination; culture and bacterioscopy of abnormal secretions and cutaneous lesions; coproculture, if present diarrhea; uroculture, if there are signs and symptoms pertinent to the urinary tract, presence of bladder catheter of delay and if urine I reveal abnormalities; complete cerebrospinal fluid: if there is suspicion of neurological impairment and normal platelet count⁽¹⁵⁾.

FIGURE 3 – Time chart (in days) from the implantation of the catheter port to cath until the death. Federal Hospital of Bonsucesso, Rio de Janeiro, 2018



In relation to catheter infection, empirical venous antibiotic therapy should be performed - the first choice scheme: Cefepime 2g EV 8 / 8h. Alternatives: Ceftazidime 2g 8 / 8h or Imipenem 500mg 6 / 6h. Association with: Vancomycin 1g 12 / 12h; agent / identified focus, 3-5 days of antibiotic therapy, based on the antibiogram, always considering that in the case of bacteremia, the use of broad spectrum antibiotics is essential; keep the antibiotic for at least 7 days, requiring the clinical recovery of the patient; persistence of fever even after 3 days of empirical antibiotic therapy: physical examination, chest X-ray, catheters, cultures, serum levels of antibiotics, and imaging (other) examinations of suspected abscesses; should be associated with Vancomycin (if not in the empirical scheme) and consider the association of Amphotericin B at a dose of 0.4 to 1 mg / kg / day EV every 24 hours; removal of the catheter⁽¹⁵⁾. This complication is considered the most serious and should be recognized early through rigorous clinical observation, rapid and sensitive diagnostic methods and treatment, and chemotherapy is suspended until its control⁽¹⁶⁾.

In pneumothorax, the position of the catheter in the superior vena cava should be confirmed by radiography after the implantation of the port a cath⁽¹⁷⁾; to maintain the intra-hospital observation for 24 hours, with clinical and radiological reassessment in this period, confirming the stability after the initial 24 hours, the patient can be accompanied ambulatorially until the complete resolution of the pneumothorax, confirmed by chest X-ray; with the diagnosis of pneumothorax of great magnitude, some invasive procedure must be performed to ensure the re-expansion of the collapsed lung parenchyma: thoracic drainage⁽¹⁸⁾, where the drains can be connected in a water-proof bottle; lung re-expansion should be ensured, if this does not occur after drainage, controlled continuous aspiration (with negative pressure of up to 20 cm of water) may be required along with respiratory physiotherapy⁽¹⁹⁾.

In the bulging in infraclavicular region, it should be observed if there is edema of neck, throat or the arm; or subcutaneous edema due to damage to the catheter or infused fluid returning out of the vein; some surgeons may request that the port not be used until postoperative edema has subsided⁽¹⁷⁾.

In the absence of progression in the implantation of the catheter, one should not proceed if there is resistance in the implantation of the catheter⁽¹⁷⁾.

In the disposition of the catheter, radiography should be performed to confirm the positioning of the catheter; The catheter should be stabilized with aseptic technique to prevent its migration and preserve the integrity of the venous access device⁽¹⁷⁾.

In the absence of flow and reflux when puncturing

the catheter, the position of the needle is checked by the return of the blood. If irrigation or aspiration is not possible, the needle may need to be pushed further toward the septum or repositioned; Check for neck, throat or arm edema; or subcutaneous edema due to damage to the catheter or infused fluid returning out of the vein; Ask the patient to change position (for example, Trendelenburg position) to increase venous flow, in addition to coughing or deep breathing to help move the catheter away from the vein wall; Try to reposition the needle; Do not infuse chemotherapy until tip placement is confirmed⁽¹⁷⁾; Perform chest X-ray to assess possible catheter fragmentation⁽²⁰⁾.

In relation to the extravasation of chemotherapy the first measure to be taken is the interruption of the infusion, heparinization of the catheter and, through the needle hole, withdraw by compression as much liquid as possible. Inflammatory reactions and ulceration may occur up to the second week⁽¹⁶⁾.

CONCLUSION

In view of the incidence of complications of catheter port to cath in the years 2014 to 2016, infection is the most prevalent, being mentioned in 14 charts of the 28 that presented complications. The least-cited complications were chemotherapy extravasation and thrombosis, cited once. All the complications found in this research are consistent with the findings of studies already existing on the subject. In comparison with other current articles, infection is the complication that predominates in the use of the chemotherapy catheter in cancer patients. Since from 2012 to 2016, only 25 scientific papers on the subject have been published, and in 2015 the last study with documentary research aiming at the complications of catheter port a cath, the current research will provide benefits for health care through the reported findings.

The health team is the main responsible for the complications of the catheter port a cath, either in the techniques used in the implantation of the catheter or in the routine management of chemotherapy and maintenance of the same. It is worth rethinking the technical approach employed for each action. For this, educational actions are necessary to promote the improvement of aseptic techniques. The scientific knowledge about each stage of the respective procedures is not successful if infection occurs after its implementation.

Faced with the reports found in the documentary research, the nursing team is the one that evolves most in the medical records about the identification of the beginning of an infectious process or other complication found. It is understood that the client, in addition to developing a bond

with nursing professionals through intensive and continuous chemotherapy sessions, the professional also has a holistic view about the health of his client through this more intimate contact, allowing to observe assiduously during the sessions of chemotherapy, or the puncture site, as well as laboratory tests prior to chemotherapy.

We believe that this research can also contribute to the quality of health care and the satisfaction of clients with cancer during the treatment, and offer a contribution of knowledge to nursing professionals, raising the standards of care, contributing to the preservation of health in the management care of cancer patients.

The impact of the research result may promote improved care, greater availability for changes in attitude and behavior of the nursing team.

From the perspective of nursing education, we hope that this research contributes to a better understanding of the topic discussed, thus preparing us as professionals to develop a conception where many complications of the catheter port a cath can be prevented by the commitment of the correct assistance practices and quality of the nursing team.

Regarding the research, we believe that the anal-

ysis of the complications that lead to the withdrawal of the catheter port to cath in the oncologic patient, will allow us to build care resources for nursing care. Therefore, it is of great value for the scientific production in this area, collaborating in the advancement of the discussions and in the expansion of knowledge on the oncological assistance. This patient should be the center of the care / attention relationship, which should be integral and holistic, meeting their expectations and needs, as a human being involved in a biopsychosocial context.

In addition, the development of this study could broaden the discussion on the subject of complications of the catheter port a cath in the In-Service Training Unit, as well as in research groups with similar interests. All the meetings would create incentives for the debate of this problem in the practice of cancer care, promoting scientific productions to increase the knowledge.

The limitations of this study are the absence of some medical records and / or absence of medical records stored at the Oncology Department, making it impossible to perform a complete documentary analysis of both medical records, thus being excluded from the study; and the medical staff record deficiency.

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