ORIGINAL ARTICLE

Patients' perception regarding the use of a long-term catheter*

A PERCEPÇÃO DO PACIENTE REFERENTE A SER PORTADOR DE UM CATETER DE LONGA PERMANÊNCIA

LA PERCEPCIÓN DEL PACIENTE RESPECTO A SER PORTADOR DE UN CATÉTER DE PERMANENCIA PROLONGADA

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ABSTRACT

This study aimed to evaluate patients' perception regarding their use of a Totally Implanted Catheter (TIC). This descriptive study uses the Critical Incident Technique (CI) for data analysis. The study was performed at a Teaching Hospital in São Paulo State, Brazil. Study participants were 15 patients using TIC. Data were grouped into four categories: *Activity Performance* (40% of the CI showed that patients were more independent, while 60% revealed that some kind of activity was restricted due to the TIC); *Altered Body Image* (57% showed the patients' dissatisfaction after the TIC implant, 14% of the CI revealed pre-implant problems, 28% of the CI showed that the TIC favored body esthetics); *Catheter Implantation* (75% of the CI revealed catheter implantation as a traumatizing procedure, while 25% of the CI revealed patients remained calm and confident during the procedure); *Chemotherapy Infusion* (100% of the CI showed that the catheter made chemotherapy easier).

KEY WORDS

Catheterization, central venous.
Drug therapy.
Self concept.

RESUMO

Este trabalho buscou avaliar a percepção do paciente portador de Cateter Totalmente Implantado (CTI). Trata-se de um estudo descritivo, que utiliza a Técnica dos Incidentes Críticos (IC) para análise dos dados. Foi desenvolvido em um Hospital Escola do interior paulista do qual participaram 15 portadores de CTI. Os dados foram agrupados em quatro categorias: *Desempenho de Atividades* (40% dos IC demonstraram maior independência do paciente e 60% evidenciaram restrição de algum tipo de atividade devido ao CTI); *Alteração da Imagem Corporal* (57% evidenciaram insatisfação do paciente pós-implante do CTI, 14% dos IC mostraram problemas pré-implante do CTI e 28% dos IC mostraram que o CTI favoreceu a estética corporal); *Implantação do Cateter* (75% dos IC mostraram a implantação do cateter como um procedimento traumatizante e 25% dos IC permaneceram tranqüilos e seguros durante o procedimento); *Infusão de Quimioterapia* (100% dos IC apontaram o cateter como um facilitador do trata-mento quimioterápico).

DESCRITORES

Cateterismo venoso central.
Quimioterapia.
Auto-imagem.

RESUMEN

La finalidad del trabajo fue evaluar la percepción del paciente portador de un Catéter Totalmente Implantado (CTI). Se trata de un estudio descriptivo, que utiliza para el análisis de los datos la Técnica de los Incidentes Críticos (IC). Fue desarrollado en un Hospital Escuela del interior de Sao Paulo-Brasil, del cual participaron 15 porta-dores de CTI. Los datos fueron agrupados en 4 categorías: *Desempeño de Actividades* (el 40% de los IC demostraron mayor inde-pendencia del paciente, mientras que el 60% evidenció restricción de algún tipo de actividad debido al CTI); *Alteración de la Imagen Corporal* (el 57% evidenciaron insatisfacción post implante del CTI, el 14% mostró problemas pre-implante del CTI y el 28% de los IC mostró que el CTI favoreció la estética corporal); *Implantación del Catéter* (el 75% de los IC mostraron que la implanta-ción del catéter es un procedimiento trau-matizante, mientras que el 25% de los IC mostró que el paciente siguió tranquilo y seguro durante el procedimiento); *Infusión de Quimioterapia* (100% de los IC evidenció el catéter como un facilitador del tratamiento quimioterápico).

DESCRIPTORES

Cateterismo venoso central.
Quimioterapia.
Autoimagen.

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INTRODUCTION

Long-term central venous catheters are widely used with cancer patients receiving chemotherapy treatment. The constant use of these patients' veins to apply chemotherapy drugs, serum, antibiotics, blood and byproducts, and the collections for laboratorial exams lead to severe problems with vein visualization and puncture. On the other hand, there are patients with good peripheral venous networks but with prolonged chemotherapy treatment. In all these cases, such catheters are recommended[1].

In the past decades, there have been several advances regarding long-term central venous access. In 1977, Hickmman performed modifications in the catheter idealized by Broviac, making it double lumen with a thinner wall, amplifying its indications. The Peripherally Inserted Central Catheters (PICC) have been available since 1970. It was not until recently that its applications were largely used and in 1982, on Neiderhuber's initiative, the totally implantable catheters were created[2].

The latter type of catheter was an advance regarding support treatment of the cancer patient. The advantages were the lower infection risk, when used continuously, lower interference in the patients' daily activities, lower care with the insertion site, lower bodily self-image disorder due to the absence of external devices and few limitations of patients' activities. The disadvantages were the cost of insertion, postoperative care and the need of a minor surgery to remove the catheter[3].

Evolutionary studies involving feelings of patients with totally implanted catheters were not found in the literature reviewed.

The totally implanted catheters are composed of a stainless steel or titanium reservoir, a silicone catheter and a central septum. This septum is covered with a self-sealing diaphragm capable of receiving between 1000 and 2000 needle punctures. The access is performed by puncture it with Huber-like needles, which have a resistant point[2-4]. They ensure a practical and high quality venous access for the patient treatment and the frequency of complications is low[2,5-6].

Among the complications found in the implantation and use of the system, the most frequent complications are infectious; however, non-infectious complications may occur, such as those related to puncture, catheter occlusion, deep venous thrombosis, post-implantation skin necrosis, reservoir extrusion, catheter fracture, migration of the catheter's extremity and leakage of medication due to erroneous puncture.

The ability to obtain safe access to the vascular system is an important part of dealing with cancer patients. Evolutionary studies involving feelings of patients with totally implanted catheters were not found in the literature reviewed. Thus, this paper was concerned with identifying the perception of the patient with long-term totally implanted catheter and aims at contributing to understanding the problems endured by this clientele.

OBJECTIVES

General objective - to evaluate the patient's perception, regarding long-term totally implanted venous catheters.

Specific objective - to identify the critical incidents (situation, behavior and consequence) reported by patients with totally implanted catheter.

METHODOLOGICAL APPROACH

The critical incident technique was proposed by John C. Flanagan in 1941, and consists of a set of procedures used to collect direct observations of human behavior to facilitate their potential to solve practical problems and to develop large psychological principles. This would help to outline procedures to collect observed incidents that show special meanings and to find criteria that are systematically defined. Any observed human activity that is complete enough to allow interferences and predictions regarding the performer of the action can be considered an incident. In order to be critical, an incident has to occur in a situation with a reasonably clear purpose or intention, from the observers' standpoint, and its consequences have to be sufficiently defined, leaving few doubts regarding its effects[7].

In Brazil, the aforementioned technique was introduced in 1970 by Dela Coleta[8] and has been widely used in several nursing-related research studies since then[7].

The use of the critical incident technique consists in asking the subjects involved in a given activity to report simple situations and facts, which are evaluated by the researchers. They can either agree or disagree, depending on the objective and situation to be studied. It is necessary to establish a set of procedures that allow the systematization and the analysis of the incidents reported[10-11].

In this study, the use of the critical incidents technique is justified in order to obtain data regarding the patients' perception of carrying a totally implanted catheter. The technique allows for identifying real daily situations and their consequences by subjects who experience a given situation.

METHOD

This research was developed after being approved by the Research Ethics Committee of the institution where the study was carried out, and data collection occurred in compliance with resolution 196/96 of the National Health Council (CNS), and a consent form was employed (HCRP No. 2690/2002).

This study sample was constituted by 15 patients with hematological pathologies who were hospitalized or being treated with ambulatory chemotherapy at a large hospital in the countryside of the State of São Paulo . Data collection was performed from May 1 through September 31, 2002.

The subjects who participated in the study met the inclusion criteria: they all agreed to participate in the study, were over 18 years old, had medical diagnosis of oncohematological disease, had a totally implanted catheter, and were able to maintain logical conversation.

A 2-part instrument was used to collect the data. The first part was used to identify the subject regarding gender, age, period with the catheter and base disease. The second part contained three guiding questions formulated with the critical incident methodological approach[7-8]. The questions were: 1) Consider the freedom and autonomy that you have to perform the activities you do or would like to. Think of how you feel and look at your body with the implanted catheter. Mention a *situation* that has occurred because you had a catheter. 2) Describe the *behaviors* or *actions* involved in this situation. 3) Mention the consequences (feelings) of the situation.

The identification data were collected from the patients' hospital records, and the interview was performed by one of the authors who manually wrote the subjects' verbal reports, in a calm setting, respecting their privacy, ensuring anonymity and data secrecy. In order to analyze the data, the steps proposed in a study[10] were followed and the same methodological resource was used: reading and inserting critical incidents, identification of the 3 elements that comprise the critical incident, i.e., situation, behavior and consequence, grouping the reports and data categorization.

RESULTS

There were 15 patients, 12 (80%) in the hospitalization unit and three (20%) in the hematology chemotherapy ambulatory. The age ranged from 20 to 45 years (average of 32.4 years and median of 30 years). There were eight (53.3%) males and seven (46.7%) females. Seven subjects (46.7%) had been diagnosed with leukemia, five (33.3%) with non-Hodgkin's lymphoma, and three (20%) with Hodgkin's lymphoma.

Concerning the time with the catheter, it ranged from eight to 990 days, with higher percentages between one and six months.

After carefully reading the patients' reports, 24 critical incidents were identified (average of 1.6 incidents per subject). They were grouped into four categories according to the similarity of the reports, namely Activity Performance, Body Image Alteration, Catheter Implantation and Chemotherapy Infusion through the Catheter. Yet, positive and negative consequences were identified for three categories. In the chemotherapy infusion category, there were no negative consequences (Table 1).

Table 1 - Absolute and percentile frequency of critical incidents by category and their consequences - Ribeirão Preto - 2002

CI Category	Critical Incidents (no=24)		Consequence (n=44)					
			Positive (no=22)		Negative (no=22)		Total	
	nº	%	nº	%	nº	%	nº	%
Activity Performance	10	41	8	40	12	60	20	100
Body Image Alteration	6	25	4	40	6	60	10	100
Catheter Implantation	4	17	2	33	4	67	6	100
Chemotherapy Infusion through Catheter	4	17	8	100	-	-	8	100

The category with the highest number of critical incidents was Activity Performance, with ten (41%) of the critical incidents mentioned, followed by the Body Image Alteration category, with six (25%). The Chemotherapy Infusion through Catheter and the Catheter Implantation category had each four (17%) of the reported critical incidents.

Regarding the *Activity Performance* category (greater independence or patient restriction to perform daily life activities), the totally implanted catheter allowed greater independence for the patient according to four (40%) reports of critical incidents. The patients mentioned that, during the chemotherapy infusion, there was greater independence, since their arms and hands remained free from the external venous device, favoring their daily life activities. Self-care was one of them. When the device was not being used for medication infusion, it did not interfere in their independence.

However, six (60%) of the critical incidents indicated activity restriction: greater dependency of the nursing team as a consequence of pain-related limitation after the implantation, movement discomfort, sleep disorders, discomfort when wearing seatbelts in vehicles and limitations for practicing sports.

The critical incidents in this category received 20 references in relation to consequences. The positive consequences (40%) for the patients were: greater freedom of movement, little interference in the performance of daily

activities and also lower dependence on the nursing team when the catheter is in use, lower anxiety related to chemotherapy treatment. The negative consequences (60%) referred to the impossibility or interference to perform activities, which were usually practiced before the implantation of the catheter, causing, according to them, feelings of limitation and anguish.

In the *Body Image Alteration* category, in which the critical incidents related to bodily perceptions were included, three (50%) of them indicated patient dissatisfaction with their physical appearance and placement of the implanted catheter. They were also concerned about the prominence of the reservoir and its unusual location. One (16.7%) incident showed the conflict endured by a female patient before the catheter implantation. She was worried about the appearance of the location and about other people looking at it. However, two (33.3%) critical incidents indicated that, due to the fact that the catheter is placed under the skin, body aesthetics is favored and physical appearance is preserved.

In this category, there were 10 references regarding consequences. They were positive in 40% of the cases. They did not alter the way in which the patient with the catheter perceives the body. They said that the chosen position for the catheter is privileged and favors body aesthetics. However, 60% of the consequences in this category were negative for the patients. In these cases, they reported that they felt ashamed of their bodies and began to wear other clothes, or that they limited the type of clothing. There were feelings of dissatisfaction with the body and sadness because they were not wearing what they wished.

In the *Catheter Implantation* category, three (75%) critical incidents were identified and evidenced that the catheter implantation is a time-consuming, painful and traumatizing procedure. One (25%) incident indicated that doctors were careful and skilled, contributing to calmness during the procedure.

For this category, six consequences were mentioned; 33% were positive (calmness when the catheter was inserted and low-intensity pain) and 67% were negative (a procedure that generated traumatizing feelings).

There was the inclusion, in the *Chemotherapy Infusion through Catheter* category, of the critical incidents related to patients' perception of chemotherapy administration through the totally implanted catheter. The four (100%) critical incidents evidenced that the catheter facilitated the treatment, since it preserves the veins, decreasing the number of punctures. The patients also noticed that the chemotherapy administration was less painful and stressful, becoming safer.

All eight (100%) consequences in this category obtained positive references. They diminished anxiety and stress, and the patients were more at ease during the infusion of chemotherapy drugs.

DISCUSSION

The long-term totally implanted venous catheter has been recommended in literature as a practical venous access, with few risks for the patient's treatment[2,5-6,12-13]. It favors the quality of life of the cancer patients, since it practically does not restrict physical mobility. It provides freedom to choose activities and favors body image[5,13,14]. However, some studies also show limitations and opposite feelings concerning such considerations[4,15]. This contradiction has also been found in the present study.

Regarding the *Activity Performance* category and its positive aspects, the research on the satisfaction level of this clientele with the device showed that their arms are free during the chemotherapy treatment. Emotional stress is reduced when it comes to chemotherapy, and it benefited the clientele. On the other hand, the disadvantage was the sleep disorder as a consequence of the catheter position[6]. In another study[13], 201 (87%) of the patients did not notice changes in their daily routine in relation to the catheter. Nevertheless, another study carried out with 69 patients with totally implanted catheter found that 51% of them showed discomfort when wearing seatbelts and 42% began to show sleep disorders after the implantation of the catheter. This study found in some reports that the catheter allowed the patients to perform daily activities, since their arms and hands remained free from the external venous device, favoring self-care. However, most of the critical incidents in this category indicated some sort of restriction after the implantation, such as a greater dependency on the nursing team to perform self-care, impairment when moving in bed, discomfort when wearing seatbelts in vehicles and limitation of sport practice. Nurses should consider such aspects when dealing with this clientele's education, and some adaptation to reality should occur.

Regarding the *Body Image Alteration* category, the literature[14] indicates that the catheter implanted subcutaneously minimizes problems with the patients' body self-image. However, the findings of another study[4] showed that 37% of the patients are dissatisfied with the catheter placement and 50% of them showed alteration of their body image. They had their physical appearance modified because of either the visible healing or the prominent catheter reservoir, consequently visible when wearing certain clothes. In another study, also carried out with this clientele, 44% of the patients showed alteration in their body image[15]. These aspects are present in the findings of this study: 50% of the critical incidents in this category. They reported dissatisfaction with the place of catheter implantation and showed, in the consequences, the modification in their bodily views and feelings. However, two incidents in this category showed that the catheter favored bodily esthetics for being implanted subcutaneously.

Thus, after the implantation of long-term central venous catheters, besides aspects related to treatment, vein sta-

tus and economical questions, the emotional aspects should be related to bodily self-image, puncture *panic*, among others[1].

It is worth mentioning that the decision of implanting or not the catheter does not belong exclusively to the multidisciplinary team. The patients' participation should also be taken into account. They will help to choose the type of catheter, the insertion site, as an attempt to reduce feelings of bodily self-image alterations, as well as being informed about the limitations imposed by the treatment.

It should be pointed out that both the *Activity Performance* and the *Catheter Implantation* categories had most of the critical incidents related to the acute phase of the procedure, and, thus, the negative consequences mentioned are also related to this phase.

The literature shows that, regarding catheter implantation, 40% of the patients were subjected to catheter insertion and reported that the procedure was worse than expected. The same author states that the patients had received both verbal and written information before the catheter insertion procedure. In the present study, this category showed a lower number of critical incidents than the previous ones, and the catheter implantation was described as painful, time-consuming and traumatizing.

While the catheter implantation is a common procedure for the healthcare team, it is not so for the patient. Hence, education is extremely important and helps preventing tiresome situations. An educational plan with the pre-implantation, implantation and post-implantation catheter phases is advisable. The nurse begins the first step of the educational plan by explaining and providing written material about the purpose and process of the catheter implantation. After that, she may show a catheter. After the implantation, the nurse explains step by step the ways in which the catheter is accessed. In the third step, the nurse calls the patient before the therapy begins, with the purpose of reinforcing the educational content. According to the author, her clinical experience has shown that the patients retain little information during the first meetings. Finally, if the patient maintains anxiety related to access, some 2.5%-lidocaine cream may be used before placing the catheter[17].

It is fundamentally important, besides their technical role, for nurses to multiply information, clarify the procedure, solve doubts and set aside any fears and taboos by implementing a nursing care that favors the patients' disease awareness.

In the *Chemotherapy Infusion through the Catheter* category, only positive aspects were present, such as safer treatment, reduction in the number of punctures received, reduction of pain and stress during infusion. A similar situation was found in a study that points out the advantages of using the totally implanted catheter when it comes to diminishing the emotional factors that cause the cancer patients to feel stress during chemotherapy, as well as reductions in trauma and discomfort experienced by patients during peripheral chemotherapy infusion.

CONCLUSIONS

The use of the critical incident technique to obtain the patients' perception regarding long-term totally implanted catheter allowed the determination of feelings experienced by this clientele. It also allowed the consideration that this type of catheter may have favored patients' independence during the chemotherapy drug infusion, since the patients reported lower dependence on the nursing team. However, there were restrictions for some patients' daily activities when the device was heparinized. Considering the body self-image, the dissatisfaction expressed by the patients stands out. Some aspects should be pointed out before the implantation of this type of catheter. Nevertheless, regarding the chemotherapy infusion, all the critical incidents indicated positive aspects, with the catheter as a facilitator of the oncology treatment, since it reduces the unpleasant aspects of this therapy. Regarding the catheter implantation, most of the critical incidents identified showed that the insertion procedure is tiresome, painful and stressful.

With these situations, the nursing professionals are regarded as having an important role in this process. They should be ready to identify situations that may be stressful for the patient and develop an educational plan about the preparation for catheter implantation, possible restrictions, changes in body image, as well as positive aspects that confer freedom in relation to other therapeutic procedures.

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