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An exploratory study on patient experiences with peripherally inserted venous catheters for the year 2024

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Abstract

Objective: To explore patient experiences related to PICC (Peripherally Inserted Central Catheters) lines.

Approach: This study utilized an exploratory design, employing questionnaires to examine patient experiences with the PICC line (N=15).

Findings: Patients reported positive experiences across all items on the questionnaire. However, a small number of respondents expressed a preference for a traditional peripheral venous catheter instead when in short term use. Additionally, open-ended responses indicated high levels of satisfaction among patients regarding their catheter. The findings also suggest that hospitals have varying strategies when choosing between a PICC line or a Midline as the preferred access route. The sole factor linked to patient experiences was "complications".

Summary: Despite patients expressing some concerns about the catheter, the results suggest they would opt for it again. These results provide valuable insights that should be included in initiatives aimed at quality improvement. It is important for nurses to engage patients in the process of clinical decision-making and offer personalized information and support to help them adjust to living with a PICC. Future research should concentrate on the relationship between complications or disadvantages and patient satisfaction, as well as on the process of shared decision-making when determining the access route.

Keywords: PICC line, midline, nurses, nursing, patient experiences, venous catheter

Introduction

The National Cancer Institute characterizes cancer as "a collection of related diseases where some of the body's cells start to divide uncontrollably and invade nearby tissues" and is recognized as one of the most significant public health challenges globally. The International Agency for Research on Cancer reported that in 2012, there were 14.1 million newly diagnosed cancer cases and 8.2 million cancer-related deaths. Cancer treatment modalities include surgery combined with chemotherapy and/or radiation therapy, immunotherapy, targeted therapy, or hormone therapy, with chemotherapy being the most prevalent option. Due to changes in demographics, there is a rising demand for healthcare services. However, the duration of hospital stays is on the decline. As a result, both hospitalized and discharged patients often present with more comorbidities and are generally sicker, while also receiving medical treatment outside of hospital settings.

A significant amount of chemotherapy is administered through repeated intravenous infusion, along with other supportive medications and oncological therapies, and patients frequently undergo blood tests to monitor treatment efficacy and side effects. The adverse effects of continuous intravenous access can involve irritation, inflammation, and potential damage to blood vessel linings. Furthermore, local venous complications, such as phlebitis, may occur, and there are risks associated with the extravasation of the drug into subcutaneous tissues. One approach to mitigate these drawbacks is the use of a peripherally inserted central catheter (PICC) line. A PICC line is placed into the veins of an upper limb and threaded into the larger blood vessels in the chest area. This catheter type minimizes the need for repeated needle sticks and can be conveniently installed at the bedside. Other types of PICCs include those where the catheter is linked to a reservoir implanted into a surgically created pocket on the chest wall or upper arm. To access the reservoir, a needle must be inserted through the skin into the port's septum. The use of a PICC is generally recommended for several scenarios: patients with cancer who have limited access to peripheral veins, those undergoing prolonged or continuous intravenous infusions of multiple chemotherapy or supportive care agents, patients needing repeated blood tests or clinical evaluations, and patients anticipating receiving a vesicant agent as part of their treatment plan. It is particularly indicated when peripheral venous access is lacking or when it has been significantly compromised due to treatment or numerous venipunctures. The use of a PICC substantially decreases the risk of extravasation, which is especially important when administering vesicant or irritating chemotherapy agents. While complications can

still arise with PICC lines, they are generally minor in nature. Typically, intravenous (IV) access is established to deliver therapies that either cannot be administered or are less effective via alternative routes. Peripheral IV catheters have traditionally been the standard choice, facilitating the safe infusion of medications, fluids, blood products, and nutritional support. The length of catheter use has been identified as a significant risk factor for infections associated with venous catheters. Generally, catheter replacements are recommended when clinically warranted rather than on a routine schedule. Nonetheless, peripheral catheters should not be used for more than 3-4 days as a guideline.

Aim of the study

- The aim of this study was to investigate patient experiences with PICC's.
- To identify the major issues encountered by patients with PICC lines.

Materials and Methods

A qualitative exploratory research design was implemented to gain comprehensive insights into individuals' perceptions and experiences. The main feature of this approach is that researchers become deeply engaged in both the data collection and analysis processes.

Results

Table 1: Descriptives of respondents (N=25)

Variables	Results	Results	Results
Gender (%)	Male	Female	-
	7 (28%)	18 (72%)	
Age	21-40	41-60	60 and above
	8 (32%)	15 (60%)	2 (8%)
Length of stay in days	0 day	1 day	-
	1 (4%)	24 (96%)	
Still hospitalized	Yes	No	-
	16 (64%)	9 (36%)	
Still have the catheter	Yes	No	-
	24 (96%)	1 (4%)	
Primary diagnosis	Ca	Other systemic infection	-
	23 (92%)	2 (8%)	
Primary treatment	Chemotherapy	Blood Transfusion	Antibiotics
	23 (92%)	1(4%)	1 (4%)
Placement of the PICC Line	Left Arm	Right Arm	-
	15 (60%)	10 (40%)	
Complications if any	Yes	No	-
	0 (0%)	25 (100%)	

Table 2: Overview of responses to the questionnaire items

Item	1=Strongly Disagree	2=Disagree	3=Neutral	4=Agree	5=Strongly Agree
1. I am fully Satisfied with information shared prior to the insertion	0	2	0	23	0
2. I know why I got the catheter	0	1	2	19	3
3. I forget that I have the catheter	2	15	0	8	0
4. I would have preferred a cannula	1	9	15	0	0
	1=Strongly Agree	**2=Agree**	**3=Neutral**	**4=Disagree**	**5=Strongly Disagree**
5. I had Discomfort during insertion	0	0	15	10	0
6. I have Discomfort when dressings are changed	3	8	7	7	0
7. Discomfort under administration	1	7	7	10	0
8. The catheter is uncomfortable	0	8	10	7	0
9. It is tender	0	15	4	6	0
10. The line site itches sometimes	0	11	5	9	0
11. I am Worried that it might dislocate	0	8	12	3	2
12. I am Worried when I sleep	0	11	6	8	0
13. I get Worried when someone hugs me	0	15	6	4	0
14. I am Worried that it might get infected	0	10	2	13	0
15. I have Trouble when showering	0	4	8	11	2
16. I have Trouble getting dressed sometimes	1	7	10	7	0
17. Having a catheter limits my daily life	0	3	9	11	2
18. I have trouble when moving my arms	0	7	9	9	0

In every questionnaire the patients disagreed to have any problems with the PICC line and had a good quality of life.

Table 3: Examples of free-text comments, collated under themes identified.

Your experience with PICC in few words			
My PICC has saved me from a lot of discomfort	It is beneficial and has made my chemotherapy easy as compared to having a canula.	It is beneficial for chemotherapy	I am satisfied with my PICC line dressing and maintenance

Discussion

This research highlights the experiences of generally outpatients receiving a PICC line insertion and their ongoing lives with the catheter. Our findings indicate that a patient's experience during the catheter insertion plays a crucial role in their eventual adjustment to and acceptance of the device. This experience involves certain advantages and some discomfort during the insertion process, followed by gradual changes needed in the patient's daily routine, as well as benefits linked to the catheter's use, leading to an overall positive assessment of PICC utilization.

Regardless of how uncomfortable patients found the procedure or the catheter itself, the majority indicated they would choose the experience again if given the option. This is supported by research indicating that patients advocate for proactive PICC insertion for their. Therefore, it is essential for nurses to engage patients in the clinical decision-making process and offer personalized information and support that aids in the adjustment of patients living with a PICC (or a Midline).

Conclusion

Our primary observations pertain to the beneficial and infrequently negative aspects of living with a PICC line. Advantages include the absence of symptoms, fewer venous punctures, and quick insertion. On the other hand, drawbacks involve pain, discomfort from the device, insufficient information, effects on daily life, and the necessity to adapt to sustain quality of life. Over time, many patients viewed their experience with a PICC line positively. These findings can be utilized in Oncology Units to enhance the understanding of the PICC experience and to create specific protocols for initial patient visits prior to the insertion of the PICC, an educational program for device care, and preparation for discharging patients with a PICC line.

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Not available

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