

Knowledge, Attitude, and Satisfaction of Patients towards Subcutaneous Port

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ABSTRACT

BACKGROUND

Venous access is crucial in patients who need repeated infusions. Infusion of medication through subcutaneous ports has been recognized as a valid method for repeated long-term infusions and has many advantages over other methods. The aim of the present study was to investigate the knowledge, attitude, and satisfaction of patients with subcutaneous port.

METHODS

In this cross-sectional study, convenient purposeful sampling method was used to select patients with subcutaneous port (n=65) who were admitted to teaching hospitals of the city of Mashhad, Iran. The instruments used in the present study included questionnaires on knowledge, attitudes, and satisfaction of patients with subcutaneous port, which were completed by patients, or the researcher in case the patient is unable to do so. Data analysis was then carried out using descriptive statistics.

RESULTS

The results of the present study showed that 46.6% of patients (n=26) were generally satisfied with port placement and 41.9% considered port placement as a good alternative to vein finding method. A total of 40.3% of patients (n= 25) had low anxiety about complications of port placement and reported pain as the most common complication. Furthermore, a total of 35.7% of patients had sufficient knowledge of the reason of port placement, 31.7% of the procedure, and 40.5% of the associated complications.

CONCLUSIONS

Results of the present study provide necessary information regarding port placement perception and knowledge among patients. The results are effective in recognizing perception and knowledge of patients with subcutaneous port and can thus be used to plan patient education and reduce patients' problems.

KEY WORDS

Subcutaneous Port, Perception, Knowledge, Patient

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BACKGROUND

Venous access is common and essential in patients who require repeated infusions.⁽¹⁾ Patients who require repeated blood sampling, repeated blood and intravenous therapy (IV) injections, and chemotherapy are subjected to the stress induced by repeated injections.⁽²⁾ Sometimes several skin sites are manipulated and used to find the right vein during IV infusions, which exacerbates the stress induced by the underlying disease. Today, direct injection is not recommended for patients who needs repeated infusions.⁽³⁾ To solve this problem, central venous access devices (CVADs) can be used for a variety of IVs therapies and provide a reliable venous route for long-term or emergency access in the case of emergencies.⁽⁴⁾ CVADs are widely used in the specialized wards of hospital, including ICUs or oncology as well as general department such as the emergency department considering their ease of placement and safety.⁽⁵⁾ There are different types of CVADs that include catheters inserted through peripheral veins, subcutaneous tunnelled catheters, none tunnelled catheters, and implantable ports.⁽⁶⁾ Studies have preferred the use of subcutaneous ports over other methods of obtaining peripheral venous access and consider it as a successful and relatively good CVAD.^(7,8) The major advantage of implantable ports over others CVADs is that it is placed under the skin and is thus invisible.⁽⁹⁾ Other advantages of these ports include the need for minimal manipulation, less impact on mental body image, reduced incidence of infection, no need for extensive care, no restriction on daily activities, and prolonged durability.^(10,11) This method can be used for repeated drug infusions in chemotherapy, blood transfusions, medications, blood sampling, intravenous feeding, and haemodialysis.⁽¹²⁾ The use of subcutaneous port system as a method of long-term drug administration is increasing, nowadays.⁽¹³⁾ In a study of knowledge and attitude of cancer patients with subcutaneous port, E Johansson et al. (2009) showed poor port-related knowledge among these patients.⁽¹⁴⁾ We found few international articles on patients' knowledge and perception of subcutaneous porta and also found no relevant study in Iran. Considering the advantages of this device for accessing veins, port knowledge plays an important increasing the lifespan, and reducing its complications. Therefore, patients' perception and knowledge of the device and its functioning plays an important role in choosing it. Therefore, the researcher decided to conduct a study to evaluate the knowledge, perception, and satisfaction of patients with subcutaneous port.

METHODS

The present cross-sectional project was conducted on all patients with subcutaneous port referring to Imam Reza, Ghaem, and Omid Hospitals of Mashhad from January 2018 to March 2019. This study was approved by Mashhad University of Medical Sciences. The STROBE checklist was used to report the study. Research fellows referred to the relevant wards of the hospitals every day and investigated patients with subcutaneous ports for inclusion criteria after expressing research goals and obtaining their informed consent. This study was approved by the ethical committee of Neyshabur

University of Medical Sciences (IR.NUMS.REC.1392.03). Inclusion criteria included wearing subcutaneous ports, repeated drug infusions through the subcutaneous port, being able to speak, write and read, and having consent to participate in the study. The present survey was conducted on all patients with subcutaneous port referring to these hospitals within six months. The instruments used in the present study included questionnaires on perception, knowledge, and satisfaction of patients with subcutaneous port. The content validity and reliability of all instruments were confirmed through Cronbach's alpha test. Then they were completed by the patients with subcutaneous port or otherwise by the researcher in the case of inability of the patient. Data analysis was then carried out using descriptive statistics. Data analysis was carried out using descriptive statistics and mean, standard deviation, relative and absolute frequency distribution in SPSS. SPSS Version 18.0 for Windows (SPSS Inc., Chicago, IL, USA) was used to analyse the data.

RESULTS

A total of 29 patients (43%) were female and 36 (57%) were male. Majority of patients had diploma and most of them were married. Most of the patients were unemployed and had no specific job. Concerning the disease status of the research subjects, the majority of them (n=27, 45%) had acute myeloid leukemia (AML), the mean frequency of chemotherapy, was 53.9 ± 6 (87%) of them had caregivers, the majority of them (n=34, 70%) referred to the physician as source of information about port care.

	Satisfaction Results of the Majority of People	Frequency	%
Recommending the use of subcutaneous port to other similar patients	High	20	32.3
Reselecting the subcutaneous port under similar conditions	High	24	38.7
The desire to remove the subcutaneous port as soon as possible	Not at all	28	45.9
Feeling safe and secure with the subcutaneous port	High	35	27
Having a specific port-related issue.	Not at all	34	54
Difficulty in everyday activities	Not at all	40	62.5
Suffering from aesthetic problem	Not at all	28	43.1
Fear of inserting the needle into the port	Low	27	41.5
Troublesome monthly port washing process	Not at all	20	30.8
Ability to work	High	18	35.3
Concerns regarding the incidence of port-related complications	Low	15	24.6
Being regretful regarding the port placement	Not at all	39	65
Lack of enjoying life due to the port placement.	Not at all	39	63.9
Having bad feelings regarding catheter insertion	Not at all	37	67.3
Direct intravenous injection instead of the port placement	Not at all	35	68.6
Painful port placement	Not at all	25	44.6
Feeling pain at the port insertion site	Not at all	30	48.4
Itching around the port insertion site	Not at all	37	62.7
Being worry regarding poor port performance.	Low	24	40.3
Being worry regarding the poor port performance	Low	25	40.5
Being worry regarding a change in the port location during sleep	Low	22	34.4
Being concerned regarding any injury during activities	Low	22	34.4
Being concerned regarding being hurt when bumping against others	Not at all	27	42.9
Bathing restrictions	Not at all	37	58.7
Exercise restrictions	Not at all	32	54.2
Restricted arm movement	Not at all	40	63.5
Clothing problems	Not at all	38	62.3
Satisfaction with the costs of port placement	Moderate	21	35
Overall satisfaction	High	26	40.6

Table 1. Knowledge, Attitude and Practice towards Subcutaneous Port

The port was placed under the clavicle in majority of patients (n=29, 63%) and positioned in the right side in 58 patients (92%). The mean duration of disease was 20 $\pm$ 17 months, the duration of port use was more than one year in 52 individuals (80%), and the mean number of ports removed was 3 $\pm$ 2.8. The majority of ports (n=23, 41.7%) were implanted due to the need for long-term intravenous treatment. Twenty-eight (67.9%) patients had port complications and pain was the commonly reported complications (15%). (table 1).

DISCUSSION

The results of the present research showed that 46.6% (N= 26) of patients were very satisfied with port placement and that they recommend this method to similar patients instead of vein finding procedure, which is consistent with the results of a study by Zhou et al.'s study.⁽¹⁵⁾ Zhou et al. focused on the port placement in the internal jugular vein as guided by ultrasonography as a safe method in patients with breast cancer. Patients referred to the port placement as a safe and secure method.⁽¹⁵⁾

The result of the present study showed that patient had little concern about poor port performance, a change in its location during sleep,, risk of injury during daily activities, as well as no limitation on wearing clothes, bathing and daily activities, which is consistent with the results of a study by Johnson et al. (2009).⁽¹⁴⁾ They reported that patients with subcutaneous ports has less restriction on wearing clothes. Moreover, patients expressed unpleasant experiences only regarding the catheter for placement process,⁽⁶⁾ but they expressed higher satisfaction with subcutaneous ports as it was subcutaneously. Other advantages of this method also include a reduction in patient discomfort during injection, a reduction in costs and frequency of infusions.⁽¹⁶⁾ The use of chemotherapy drugs can cause damage to the walls of peripheral arteries, resulting in problems with access to and use of these arteries. Frequent vein findings and difficulty in accessing the arteries were among major problems reported by these patients.⁽¹⁷⁾ In addition, the durability of this device is greater than that of the temporary catheters, which is accompanied by increasing patient satisfaction.

According to the results of the present study, the majority of patients (n=35, 27%) referred to the subcutaneous port as a highly safe method and the majority of them (n=27, 41.5%) expressed little fear of the insertion of the needle into the port, which was consistent with the result of a study by Zhou et al.⁽¹⁵⁾ The results of the present study referred to pain as the most common complications (15%), which was not consistent with a study by Singh et al., (2010). They reported leakage and infection at the port insertion site as the most common complication.⁽¹⁸⁾ Dehkhoda et al. referred to port failure as the most common complication (15%), which was not consistent with the results of the present study.⁽¹⁹⁾ Therefore, different complications have been reported in various studies that can be related to the placement procedure, patient care, frequency and cause of port placement.^(20,21) The use of venous catheters, especially the port catheter, plays an important role in the care of the health of infants, children, and adults.⁽²²⁾ The use of the subcutaneous port, considering its subcutaneous placement, is

preferred to other methods of accessing veins. Patients undergoing chemotherapy who need repeated infusions face major problems that include the need to puncture different veins, gradual thinning of their wall structure on the scene involved structure in them, and eventually vein blockage, which lead to pain, discomfort for the patient as well as cause injury to the peripheral arteries, and new problems for these patients.⁽²³⁾ Previous studies show that ports are widely used to prescribe medication, and given the use of subcutaneous ports for fluid management is increasing rapidly worldwide. Port placement is a cheap and fast treatment that has high therapeutic efficacy and low complications. It also brings more comfort to patients and their companions. A total of 126 patients expressed safety with CVAPD and 9 patients expressed fear of leakage at the port placement site. Furthermore, 30% of patients thought the use of poor placement increase rapidly in the hospital setting. After examining the medical procedure, a total of 167 patients (18%) reported that surgery has had little or no pain, and generally the ports have been removed after an anticancer treatment. Patients also expressed higher satisfaction with this method. It is important to use venous catheters for the care of patient requiring long-term treatment.⁽²⁴⁾

CONCLUSIONS

Results of the present study indicate the need to pay attention to patients' level of knowledge, attitudes, and satisfaction with regard to cancer related complications. These results can be used in patients with acute and chronic conditions. Oncology patients are candidates for using CVCs in various stages of the disease such as surgery, use of chemotherapy drugs, chronic course of disease, and advanced stages of disease for maintenance treatments.

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