



Vein Port Access: YouTube as a Tool for Learning Vein Port Access Technique

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Abstract

Purpose: Vein port systems are often used for infusion therapy. Safe access of these devices is necessary to ensure optimal device performance and the minimization of possible complications. We assessed the utility of YouTube for learning vein port access technique.

Materials and methods: The YouTube video database was searched for video files demonstrating vein port access technique. A scoring tool was developed to acquire objective data about the adherence of the operator to accepted access technique.

Results: Fifty-one YouTube videos were assessed for their value for learning vein port access technique. Using a scoring tool with a maximum score of 36, the scores for the 51 videos ranged from 7 to 32 (mean score = 18.7). The best scores were for videos recorded as instructional videos by nurses and patients, with scores ranging from 17 to 32 (mean score = 24.0).

Conclusions: There was considerable variability in the utility and value of the videos reviewed. Some videos were very informative and instructional, some were very uninformative, and some conveyed incorrect information that could lead to device failure and undue complications related to inappropriate port access technique. Health care providers, patients, and other caregivers should be very skeptical of the value of YouTube videos demonstrating medical techniques and should only accept the information provided if it is from a reputable source, which can often be very difficult to ascertain.

Keywords: complications, online video, port access technique, self-care, teaching, vein ports

Introduction

Patients who require long-term venous access have the option of having an indwelling vein port system, also referred to as a totally implanted venous access device (TIVAD), for their infusion needs. To maximize port longevity, prevent port damage, and minimize the risk of complications such as infection and device occlusion, vein ports must be safely and carefully accessed by trained personnel.

At times, patients express a desire to learn to care for their own medical devices. Both patients and family members can learn to take part in long-term care strategies related to venous access devices. However, the training that they receive is pivotal in ensuring that they perform port access safely and appropriately to maximize success, ensure port longevity, and minimize complications. Training must be obtained from reliable and reputable sources.

There are very few national or international standards or guidelines that address the process of safe and standardized port access. There are often state, provincial, regional, and local guidelines available that influence the actions of access teams. However, it is often difficult to gain access to these site-specific guidelines because some of them are available only via the local intranet or on locally circulated paper.

YouTube is a popular Web-based service that allows video owners to share movie files. "Founded in February 2005, YouTube allows billions of people to discover, watch and share originally-created videos. YouTube provides a forum for people to connect, inform, and inspire others across the globe and acts as a distribution platform for original content creators and advertisers large and small."¹ YouTube has a policy and safety hub that provides guidance to users via a general policy center, a safety center, and a reporting and reinforcement center. Users are encouraged to be familiar with these online resources and to use them as they see fit.¹

It was our assumption that YouTube would be rich in entertaining videos, but also have content posted that could be educational. Hence, a search of YouTube videos was performed to assess the utility of videos geared toward educating

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Table 1. Features and Scoring for Section 1

History/ background of port	Comments about port site health	Frequency of port flushing
Yes - 1	Port orientation - 1	Once/month or after every use - 1
No - 0	Redness - 1	No - 0
	Swelling - 1	
	Drainage - 1	
	Skin lesion(s) - 1	
Subtotal 0-1	Subtotal 0-5	Subtotal 0-1
		Possible total 0-7

patients and health care providers about best practices related to TIVAD procedures.

Materials and Methods

A search of the YouTube video database was performed using their standard search tool. A search for *TIVAD* revealed no data. A search for vein port access revealed hundreds of links that could be bookmarked; 300 of these Websites were reviewed sequentially for suitability for assessment. Videos that illustrated vein port access and were at least 1 minute in length (n = 51) were saved for detailed analysis.

An evaluation tool was created using published guidelines and port management documentation from a variety of sources.²⁻⁴ The tool consisted of a scoring form that was completed

by the reviewer during viewing of the YouTube video file. This scoring sheet was completed by a single reviewer (B.B.).

The scoring tool consisted of 4 major sections. The first section assessed the verbal interaction between the operator and the port owner; that is, history of the port, reason for access, importance of regular flushing, and port site health (eg, port orientation, redness, swelling, drainage, and skin lesion). The second section assessed the sterile technique of the operator; that is, hand hygiene, skin prep, mask, gloves, sterile work area, and draping. The third section assessed the use of a non-coring needle, the needle insertion technique of the operator, the syringe size used, and if the operator aspirated blood before injecting. The fourth section assessed flushing technique; that is, sterile saline flush, pulsed flushing, positive pressure flushing, line clamping, and the use of heparin when closing the port.

Each section of the scoring tool was allocated a numerical score for ease of assessment. The scoring tool is presented in [Tables 1-4](#). As such, each section could be numerically scored to determine the overall performance of important procedural steps. The maximum possible score that could be achieved by each video was 36 points.

Results

Fifty-one videos were reviewed. All of the videos assessed demonstrated chest port access technique. The videos reviewed ranged in length from 1 to 16.7 minutes in length.

The vein port access viewed in the videos was performed by an unidentified member of a health care team (38 videos), by a nurse (4 videos), or by the patient him- or herself (2 videos), while providing detailed access instructions by a patient (4 videos) or by the patient’s mother (3 videos).

As noted above, 6 of the videos reviewed were considered to be instructional, where the operator engaged in dialogue that was explicitly provided to teach the viewer about the specifics

Table 2. Features and Scoring for Section 2

Hand hygiene	Sterile technique	Skin cleaning agent	Skin cleaning technique
Yes - 1	Skin preparation - 1	Chlorhexidine - 5	Side-to-side, up and down - 5
No - 0	Mask - 1	Povidone/iodine - 3	Circles - 3
	Sterile gloves	Alcohol - 3	No pattern - 1
	Nonsterile gloves with ANTT strategy	None - 0	
	Sterile work area		
	Sterile drape		
Subtotal 0-1	Subtotal 0-5 ^a	Subtotal 0-5	Subtotal 0-5
			Possible total 0-16

ANTT = aseptic nontouch technique.⁴

^aOnly scored 1 of sterile gloves or nonsterile gloves with ANTT, hence total possible points = 5.

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