

Teaching Plan: Deep Vein Thrombosis

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**Patient Admission:**

Patient TA, age 49, presents to the emergency room with the primary complaint of leg pain, specific to the patient's right calf. Upon questioning the patient, it was found that the patient fell earlier this week and his primary care physician provided the diagnosis of a knee sprain, along with dislocation of his left pinky upon bracing on impact. The patient decided to come to the emergency room when he identified a persistent low grade fever in the evenings, shortness of breath, and increased swelling in his right knee and calf, regardless of the at home care regimen prescribed, including rest, ice, compression, and elevation. The primary care physician also recommended aspirin for the inflammation and pain.

Upon assessing the patient, the location and description of pain, along with the uncontrollable swelling, shortness of breath, and reports of night time fever led the emergency room physician to evaluate the patient for deep vein thrombosis. First, an ultrasound was ordered for the right leg, and blood was drawn to evaluate for labs. The ultrasound revealed that TA had a massive clot going from his right calf, up to his right hip area. Because the clot had traveled so far up the leg, and the ultrasound could not visualize the hip, a CT of the chest was ordered to evaluate for clots in the lungs.

The CT scan revealed multiple clots in the lungs, resulting in a secondary diagnosis of acute pulmonary embolism. Lab tests revealed no abnormalities, and TA's vitals remained in a normal range, besides a recurring low-grade fever of 100 at night, leading the attending physician to conclude that the inactivity due to TA's fall earlier that month led to this deep vein thrombosis, and eventually acute pulmonary embolism.

Following the discovery of the clots, TA was administered Heparin, and was scheduled with interventional radiology for placement of a percutaneous transcatheter from his right calf up to his groin to remove the clots in his leg, and TPA was delivered for 48 hours. After 48 hours, an X-ray camera was pushed through the catheter to confirm that the clots had been broken up, and the catheter was removed. TA was then observed for one more day and then discharged with a prescription for Eliquis twice daily for 6 months. This prescription was then switched to Xarelto once daily, for life.

The cause of TA's deep vein thrombosis remains disputed by his primary care physician. TA was tested for factor 5, which came back negative. All of TA's lab work returned within normal levels, and no high blood pressure or elevated vitals were reported in any recent visits to his primary care physician. The only risk factors that TA tested positive for were being mildly overweight and having a family history of deep vein thrombosis. Family history reveals that TA's mother and maternal grandfather both had a history of deep vein thrombosis, but the negative factor 5 test reveals that this is not a genetic predisposition. This paper will describe the teaching provided to TA, for the primary diagnosis of deep vein thrombosis, as approved by Dr. Perkins.

### **Patient Education:**

Discussed by Potter, Perry, Stockert & Hall in *Fundamentals of Nursing* (2016), Patient education is crucial in the nursing process because it provides the patient with tools to take control of the management of their health, and prevent acute or chronic diseases (p. 346). Patient TA received education in alignment with the three primary goals of patient education, including promotion of health, restoration of health, and coping with impaired functions related to his

diagnosis of deep vein thrombosis. Because deep vein thrombosis affects so many facets of a patient's health, it was deemed appropriate to educate on all three goals of patient education.

Maintenance and Promotion of health aims to help patients adopt healthier lifestyle habits, which can in turn prevent acute and chronic illnesses. Living an active lifestyle helps prevent the development of thrombi, as well as eating a healthy diet. In a book titled *Deep Vein Thrombosis: Symptoms, Diagnosis & Treatments* by Takashi Yamaki (2013), physical activity is evaluated for its effectiveness in the treatment of deep vein thrombosis. Four randomized trials concluded that walking beginning early after diagnosis resulted in less severe post thrombotic symptoms and less hypoxic damage to the calf muscle. Walking was also found to help reduce swelling, so TA will be educated that physical activity can help manage uncomfortable symptoms associated with deep vein thrombosis, and prevent future thrombi from forming.

To promote restoration of health, education focused on drug compliance was the single most important topic discussed. Reiterated by Ignatavicius and Workman (2015), the Joint Commission's National Patient Safety Goals cite drug compliance as the top priority when educating patients with deep vein thrombosis. Ensuring that a patient takes their anticoagulant as prescribed significantly reduces their chances of developing thrombi in the future (p. 746). Additionally, TA will be educated on the importance of wearing compression stockings during the day, and in the evening. TA will also be educated on elevating his leg above heart level for at least 20 minutes, four to five times a day. Adhering to these interventions will promote postural drainage, decreasing swelling to the site, and alleviating discomfort on TA's affected right leg (p. 747).

Although TA will be able to participate in a lot of the activities he participated in previously, some activities will be limited to avoid potential trauma. TA played a lot of soccer prior to his hospitalization, being a soccer and football coach. TA will be educated on avoiding participating in the contact aspect of these sports to avoid potential trauma (Ignatavicus, et. al, p. 746). Coping with new limitations puts TA at risk of developing depression, so his family will be included in his care plan to provide support psychosocially.

After assessing TA, it was determined that the most effective method of teaching was cognitive, so a thorough verbal explanation was provided as well as reading material for him to review. Psychomotor was also used to teach TA how to apply the compression socks, and the teach back method was utilized to ensure that the teaching method was effective. An open discussion was utilized to allow TA to ask questions to further his comprehension of the teaching content. The affective domain of teaching was also used to involve TA's family, so that his family could help him comply with his new regimen. Because of COVID regulations, TA's family was not allowed to visit while he was in the hospital, so educating TA's family as well as himself in an open discussion was crucial to allowing TA to receive some support.

### **Nursing Process:**

A need for patient education was determined when TA stated that he was not sure what his new diagnosis would mean for him in terms of daily living. Upon reviewing medications with TA, he verbalized that he did not want to take medication for the rest of his life. Assessing this reaction I found that TA is not on any other daily medications, and had never experienced a serious medical issue previously. It was also discussed that TA had some anxiety after seeing his mother go through several therapy options for her deep vein thrombosis, and the pain she

endured. TA was reassured that compliance with medications and walking on a regular basis would decrease symptoms related to his deep vein thrombosis, and help to prevent some of the pain associated with the episode. It was also reiterated that compliance to this regimen would help to ensure that he could still participate in almost all of the activities he enjoys, as long as proper care is taken to avoid trauma and exacerbation.

### **Factors that Influence the Learning Process:**

Many factors influence the learning process, including a patient's readiness, the patient's environment, the patient's ability to learn, and the patient's motivation to learn. Learning is highly individualized and this should be considered a priority when providing education to patients. Motivation varies by patient, and as a result, some patients place more of a value on maintaining their health than others because they do not perceive the disease as a threat, do not believe they can overcome barriers associated with changing lifestyle habits, or do not see the benefits of adopting a healthier lifestyle. Attentional set plays a sizable role in a patient's readiness to learn, and accounts for the patient's mental state. If the patient is anxious, in pain, or distracted, they will not learn or comprehend at an optimal level.

Intellectual ability considers a patient's level of knowledge and intellectual skill. Identifying the patient's current knowledge base, and building off of this knowledge base is an effective strategy for teaching. Health literacy also has a sizable influence on a patient's ability to learn. This takes into account a patient's access to health related information, as well as their ability to comprehend and apply that information to maintain and promote good health. Minority populations, elderly, immigrant populations, people of low income, those with chronic mental or physical health conditions, and those without a high school education are at the highest risk for

low health literacy. In *Medical-surgical nursing: Patient-centered collaborative care*, Potter and Perry conclude that these influences matter, because “9 out of 10 adults may lack the skills needed to manage their health and prevent disease” (p. 350).

Assessing TA for factors that could potentially affect his learning, a few things were considered. TA was ready to learn, and motivated, as evidenced by his attentiveness and interest in the content being discussed, asking questions and reciting back what he had heard. TA’s pain was controlled prior to educating him, so he was in an attentional set. TA is a masters level college graduate with high intellectual ability, so comprehension of material was not an issue. TA also has ample access to healthcare and is not economically disadvantaged.

While assessing for any cultural influences on TA’s learning, it was found that TA grew up in a home where regular doctor and dental visits were not attended, and health literacy was low, because of his family’s low socioeconomic status. TA learned poor nutritional habits from his mother, who he describes cooked with foods high in saturated fats, cholesterol, and sodium such as frozen meals and fast food. Being accustomed to a high fat, high sodium diet could discourage TA from making dietary changes. Because TA was taught to avoid the doctor, some advice and education may not be adhered to.

Potter et. al (2016) explain that self efficacy is a patient’s belief in their own ability to make or maintain changes, as well as positive outcomes, in their life. Self efficacy is linked to self confidence, and a great indicator of a patient’s motivation to make behavioral changes. Breaking care instruction down into manageable steps as well as supporting and encouraging the patient helps to shift the patient from a mind of anxiety and self doubt, to comfort and confidence in their abilities. Self efficacy is developed from four sources, including verbal persuasion,

vicarious experience enactive mastery experience, and psychological and affective states. As a nurse, applying interventions to enhance self-efficacy relates to a positive outcome, including an increase in the achievement of health outcomes (p. 347).

TA's self efficacy levels were evaluated by reviewing his history of compliance to health management programs. Upon review, TA developed a melanoma on his left cheek, and had it surgically removed by a dermatologist. At TA's follow up appointment, progress notes noted that TA was compliant with his therapeutic regimen, including limiting sun exposure and applying sunscreen daily. Additionally, TA verbalized his commitment to following his care plan, and asked questions that confirmed his interest in initiating at home interventions correctly. TA appeared confident and displayed no signs of apprehension regarding following through with his care plan, once the care plan was explained. TA also took notes on his discharge papers and read provided pamphlets on deep vein thrombosis prevention and care thoroughly, prior to discharge.

#### **Patient's Educational Goal:**

After interpreting data from the initial assessment, it was determined that the nursing diagnosis most appropriate for TA is impaired home maintenance, as evidenced by difficulty with prescribed maintenance, and failure to take action to reduce risk factor (Ackley, Ladwig, & Makic, 2016).

The patient education goals for TA included understanding the importance of medication regimen adherence. Specifically, the goal was for TA to verbalize understanding of the importance of adhering to his medication regimen, by his discharge date.

To ensure an effective learning environment, it was ensured that TA's pain was controlled prior to providing education. Once TA's pain was at an acceptable range, TA was asked a series



of questions relating to his diagnosis of deep vein thrombosis using open-ended questions, to see what the education should focus on. As presented by Ackley et al. (2016), Research has shown that identifying a patient's perception of their disease, and then working to facilitate changes in this perception leads to a higher level of intention to make lifestyle changes associated with their disease or condition (p. 453).

After anxiety was identified regarding adhering to the medication regimen, assistance was implemented to enhance TA's level of confidence in his own abilities to follow through with this new regimen. Research has shown that educational programs such as this one result in patients with better self-care maintenance, confidence, and quality of life scores, which in turn enhances compliance (p. 453).

The next intervention implemented was helping TA to identify and modify potential barriers to effective self-management. It was identified that TA's biggest potential barrier to adherence was remembering to take his medication twice a day. A plan was developed to use a timer system to have an alarm go off twice daily to remind TA to take his medication. Research has shown that self-management practices are affected greatly by interactions and interventions provided by their healthcare providers (p. 453).

Because the teaching to TA was provided in a hospital setting, several environmental distractions could occur, so measures were taken to ensure an effective learning environment. When education was provided, the door was closed to limit noise distractions. Because this information is important, TA was educated in a one-on-one manner, so that it did not feel too overwhelmed. Adequate lighting was ensured, as well as an acceptable room temperature. Adequate lighting helps to ensure that the patient can see demonstrations properly (Potter, Perry

p. 350). The teach back method was used to ensure that TA comprehended the education that was provided on proper compression stocking application. TA was shown how to properly apply them, after which he returned the demonstration to show that he understood.

Assessing the effectiveness of these educational interventions, it was found that each intervention was effective and resulted in the goal for TA to verbalize the importance of adhering to his medication regimen by discharge to be accomplished. The open ended questioning technique identified that TA's perception of his diagnosis gave him anxiety which led to feeling like he did not want to comply with his new regimen.

Once this was identified, TA was reminded that he had adhered to care regimens before and was very capable of following through with taking his medications daily. TA stated that he was confident in his ability to comply, but needed some assistance forming a plan. Finally, it was identified that TA's biggest road block to adherence was remembering to take his medication, so it was recommended that he set alarms twice a day, which left TA feeling much more confident in his understanding of how to comply with his regimen. Ultimately these interventions were effective, and led TA to voice his understanding of the importance of medication regimen adherence upon discharge.

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