

Introduction

Assessing the risk of a patient to develop intravenous device-associated phlebitis is essential in acute and chronic care. Ethel Ritter is an old client who has shown a high potential for developing phlebitis. She has a high risk of developing intravascular device-associated phlebitis. She is 85-year-old and has experienced lethargy, dysuria, dehydration, and urinary urgency. She is a persistent smoker who can smoke up to 20 cigarettes per day. She is not suffering from any allergy and does not take any medication. She has started the intake of intravenous fluids. The paper brings out various aspects of intravenous device-associated phlebitis, as well as the treatment and management of the condition in relation to the case of Ethel Ritter.

The client has risk factors that are associated with the development of phlebitis. The client is old and does not engage in physical exercise. The client is a diehard smoker who cannot live without cigarettes. The client is at the risk of developing phlebitis due to personal risk factors and the fact that she is going to receive an infusion of saline water and antibiotic through intravascular devices. She is to be admitted to the medical ward for intravenous fluid rehydration and antibiotics. The old people are more predisposed to the development of phlebitis due to their inactivity. The state of physical inactivity encourages the pooling of blood leading to the formation of blood clots. Blood clots trigger the development of phlebitis.

Pathophysiology of Intravascular Device-Associated Phlebitis

Intravenous devices are useful in administering fluids, medicine, nutrients and blood products, as well as monitoring the hemodynamic state of a person. Mutters et al., (2014) postulate that the devices are associated with the development of certain undesirable health conditions like phlebitis. The application of intravascular devices in the health care setting has been complicated by the occurrence of various systemic and local infections. Phlebitis has emerged to be a common complication that is associated with the use of intravascular devices (Mutters, Günther, Heininger & Frank, 2014). The devices cause phlebitis through physiochemical or mechanical means. There are various factors that influence the development of intravenous device-associated phlebitis. The factors are the size of the catheter, the types of infusate, and the individual risk of a patient to develop the condition. The occurrence of phlebitis increases the possibility of developing infections associated with the local catheter (Rippingale & Fisk, 2013).

Phlebitis is a medical condition that is characterized by the inflammation of the vein. It is caused by the formation of blood clots in the veins. Phlebitis can be categorized into superficial phlebitis and deep vein thrombophlebitis. The occurrence of thrombophlebitis is common in the veins of the leg, but the condition may also be experienced in the arm. Thrombophlebitis is caused by the formation of thrombus. The thrombus can be a source of great pain and irritation and may eventually block the flow of blood to the veins (Wei & Xiaoming, 2012). Superficial phlebitis occurs in veins that are located on the skin surface. It can be resolved rapidly by proper care. It is possible for individuals suffering from superficial phlebitis to develop deep vein thrombophlebitis with time. Deep vein thrombophlebitis occurs in large vessels that are deeply located in the legs. A serious medical condition known as pulmonary embolism can occur when large blood clots that have been formed in the vessels break away and move to the lungs (Dunda, Demir, Mefful, Grieb, Bozkurt & Pallua, 2014).

Medical and surgical procedures can cause superficial phlebitis. The procedures can cause injury predisposing the body to the risk of forming a blood clot. Formation of blood clot increases the risk of developing phlebitis. In addition to the medical procedures, there are several lifestyle factors associated with the development of phlebitis. The risk factors include smoking cigarettes, prolonged state of inactivity, sedentary lifestyle, certain medical conditions, obesity, arm or leg injury, hormone replacement therapy, pregnancy, and varicose veins. Prolonged inactivity is a situation whereby a person sits or stays in bed for a long period. It stagnates or slows down the flow of blood to the leg (Dychter, Gold, Carson & Haller, 2012). Inactivity causes pooling of blood leading to the formation of thrombus. Certain medical conditions like blood disorders and cancer are considered to be risk factors for phlebitis since they increase the potential of the blood to form clots (Dunda et al., 2014).

Prevention of Phlebitis

Proper hygienic practice and handling of intravenous devices can prevent the occurrence of phlebitis. Trained personnel should be in charge of inserting and maintaining vital medical devices. Phlebitis can properly be addressed if the condition is detected early and taking necessary steps to prevent the situation from worsening. In case of deep vein thrombophlebitis, a patient should seek immediate medical attention. A patient should visit the emergency department of a hospital for evaluation in case of the following red flags: shortness of breath, high fever, severe painful sensation and swelling of the lower and upper limbs and formation of lumps on the leg (Keogh, Marsh, Higgins, Davies & Rickard, 2014).

The Comparison of Conflicting Views on Intravascular Device-Associated Phlebitis

Phlebitis is not an infection. It is an inflammatory response triggered by the presence of clots in the veins. Intravascular devices may cause several infections if they are poorly handled. Phlebitis is not caused by pathogenic microorganism. It is caused by mechanical or physiochemical factors. Phlebitis can be categorized into superficial phlebitis and deep vein thrombophlebitis (Benaya, Schwartz, Kory, Yinnon & Ben-Chetrit, 2015).

The onset of superficial phlebitis is usually characterized by the formation of a tender red spot on the superficial veins of the skin. A long and thin red region may emerge on the superficial veins due to inflammation. The affected part of the superficial vein may be tender, warm, and hard. Swelling and itchiness may occur on the skin that surrounds the compromised veins. Throbbing and burning effect may also occur on the skin (Boyce & Yee, 2012). Lowering of the leg when getting out of the bed in the morning may make the symptoms worse. The occurrence of a low-grade fever may also be possible in superficial phlebitis. In certain cases, phlebitis may be caused by a peripheral intravenous line. The area surrounding the vein may experience soreness and tenderness. Phlebitis may cause infection, leading to various symptoms like skin breakdown, redness, pain, fever, and swelling (Paşahoğlu & Kaya, 2014).

The symptoms of deep vein phlebitis are similar to the symptoms of superficial phlebitis. There are cases where people may not have any symptoms. The symptoms of the condition include painful sensation and swelling of the entire limb. The swelling of the leg may occur for no particular reason. Fever, discoloration of the skin, and bacterial infection may occur in certain individuals. The development of ulcers may be possible in chronic cases or due to inadequate treatment of early case (Ray-Barruel, Polit, Murfield & Rickard, 2014).

Education Needed for the Client to Manage the Condition of Intravascular Device-Associated Phlebitis

A healthy person with superficial phlebitis can be allowed to go home as long as he or she is given anti-inflammatory medications for controlling symptoms. The application of compression stockings is also useful in managing the situation. Additionally, the condition can be managed by elevating the limbs and applying warm compressions. Anticoagulant treatment is useful for individuals having a history of deep vein thrombophlebitis. Anticoagulant medication can be taken for a period of 3 to 6 months. It is wise to seek hospital admission and further treatment if phlebitis has progressed to the deep veins since it is a lethal condition that requires immediate and special medical care (Mutters, Günther, Heininger & Frank, 2014).

Inter-Professional Collaboration Preventing Intravascular Device-Associated Phlebitis

Phlebitis associated with intravascular devices can be prevented through continuous quality assurance and educational program. According to Wei and Xiaoming (2012), the application of in-line filters can significantly reduce the occurrence of phlebitis associated with infusion of the intravascular devices (Wei & Xiaoming, 2012). The site of catheter insertion has an influence on the development of phlebitis. Phlebitis is more likely to develop if a catheter is inserted into the lower extremity of an adult as compared to the upper extremity. The veins of the hands are less likely to develop phlebitis as compared to the veins of the wrist. The type of material that an intravascular device is made of determines the likelihood of phlebitis occurrence. Polyethylene catheters are associated with a higher risk of developing phlebitis while polyurethane catheters are associated with a lower risk of phlebitis development. The application of proper hygiene and aseptic protocols can reduce the occurrence of infections and phlebitis (Maki, 2013).

Conclusion

Intravascular device associated phlebitis is a common condition in both chronic and acute care. The condition results from the formation of a clot in the veins. The efficient use of medical equipment and strict adherence to the standard operating procedures in health facilities can help in reducing the incidence of the intravascular device-associated phlebitis. The client is at a higher risk of developing phlebitis due to her old age and lifestyle factors like smoking. The client should not be allowed to smoke. She should participate in physical activities. The medical professionals should administer the saline infusion professionally and competently to minimize the possible development of phlebitis.