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Deep Venous Thrombosis in Surgical Orthopedic Patients

Kelly Marsh
Otterbein University, kelly.marsh@otterbein.edu

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Introduction to DVT

- The term venous thromboembolism (VTE) is defined as a syndrome that collectively comprises both deep vein thrombosis (DVT) and pulmonary embolism (PE). Each year an estimated 1.9 million people in the United States develop VTE and approximately 100,000 people die as a result of this condition (Suffredini et al., 2014). Unfortunately, the recurrence rate for VTE remains very high, with an estimated risk of 30%–50% of VTE patients who will develop another VTE within five years of the first incident (Suffredini et al., 2014).

- Deep vein thrombosis (DVT) is a blood clot that forms in a large vein, usually in the legs. It is a slow flow blood clot such as the leg or pelvis. Clots can form in the deep veins (DVT) or superficial veins (superficial thrombophlebitis or phlebitis). Superficial blood clots rarely cause significant illness.

- A blood clot can detach or embolize, becoming mobile in the bloodstream. This is called a pulmonary embolism (PE) or a deep vein thrombosis (DVT). If the clot is large enough, it can cause a heart attack or stroke (Centers for Disease Control and Prevention [CDC], 2014).

- DVT causes significant morbidity and mortality. The most common complication of DVT is pulmonary embolism (PE) which occurs in approximately one third of patients that experience DVT (Boner & Johnson, 2013). PEs can cause symptoms of突发性胸痛 or leg pain upon ambulation, and these symptoms can result in death. One fifth of all deaths due to venous leg ulcers in severe cases (Boner & Johnson, 2014). PEs can significantly affect a person’s quality of life and lead to serious disability.

- While other risk factors exist, the incidence rate of DVT is known to increase in association with particular orthopedic surgery. Without prophylaxis, the incidence rate of deep vein thrombosis in the orthopedic surgical patients is reported to range from 50%–60% (Bonner, 2008). As part of ongoing efforts to increase the efficiency and overall cost-effectiveness of hospital operations, the Centers for Medicare and Medicaid Services (CMS) and the Joint Commission adapted standardized performance measures for hospitals. Among other performance measures, VTE related total hip replacement and total knee replacement surgeries were included. The figure shows the current value for DVT and PE for extended inpatient rehab facility for intensive care unit (ICU).

- The rate is highly suspected. A VTE is venous thrombosis is ordered.

Presentation of Case

Figure 2. REMARC.

- The patient has a past medical history of hypertension, hyperlipidemia, and obesity. She had a history of right hip replacement surgery performed in anticipation to gain a deeper understanding of the patient's presenting symptoms and to rule out complications of her recent surgery.

- The patient was a 56-year-old female who presented to the emergency department with a chief complaint of new onset right lower extremity pain that is worse upon ambulation. The patient denies any chest pain or shortness of breath. She states she has been feeling somewhat bloated and fatigued over the past week and currently has lost 10 pounds in 2 weeks. She has a past medical history of hypertension, hyperlipidemia, and obesity. She is a non-smoker and has never used tobacco. She has a history of right hip replacement surgery performed in anticipation to gain a deeper understanding of the patient's presenting symptoms and to rule out complications of her recent surgery.

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The patient was admitted to the hospital for further evaluation and management.

Figure 3. VTE vs. PE.

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