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INTERNAL MEDICINE BOARD REVIEW MANUAL

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Venous Thromboembolism; Gastroesophageal Reflux Disease

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Chapter 1—Venous Thromboembolism

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I. INTRODUCTION

Venous thromboembolism (VTE) has 2 major clinical manifestations. The first—deep venous thrombosis (DVT)—causes swelling, pain, tenderness, increased warmth, and erythema of the affected extremity. Most lower extremity thrombi originate in deep calf veins and later extend proximally. Signs and symptoms occur when venous return in the large proximal lower extremity veins (popliteal and iliofemoral) becomes severely impaired. The second manifestation, pulmonary embolism (PE), occurs when a clot dislodges from a venous site and migrates to the pulmonary circulation. Most pulmonary emboli originate from thrombi in proximal lower extremity veins; however, clots from any venous site or right-sided cardiac chambers can embolize. Lower extremity emboli, by virtue of their large size, are more likely to cause symptoms than clots originating from other venous locations. The clinical manifestations of PE are diverse and may range from mild pleuritic chest pain to sudden death. Frequently reported signs and symptoms such as dyspnea, tachypnea, chest pain, and tachycardia are nonspecific, occurring in many other common disease processes that are included in the differential diagnosis of suspected PE. Although most pulmonary emboli originate from lower extremity sites, clinical signs and symptoms of DVT are usually lacking in patients with PE. Of patients with confirmed PE, 70% have evidence of lower extremity clot on bilateral contrast venography; however, most do not have positive noninvasive lower extremity studies. In addition, among patients with confirmed symptomatic DVT, close to 50% of patients without symptoms of PE have lung scan findings suggesting that embolism has occurred.[1]

The exact incidence of VTE is unknown. Recent studies suggest that in the United States, approximately 1 in 1000 persons is hospitalized with this diagnosis annually.[2] **The actual incidence is probably much higher because autopsy data indicate that most pulmonary emboli are not diagnosed antemortem.** It has been estimated that approximately 10% of patients with PE die within 1 hour of onset. In the remaining 90%, fewer than 33% are diagnosed and treated. The mortality rate with untreated PE may be as high as 30%; however, with accurate diagnosis and treatment, death from recurrent thromboembolism is uncommon (< 10%).[3]

The incidence of VTE increases exponentially with age. In patients older than 40 years, the incidence doubles with each decade. Among elderly persons, the 30-day mortality rate may approach 15% in patients with documented VTE. Among all patients with VTE, 1-year mortality is approximately 20% to 25%. Most deaths are attributable to coexisting illnesses, particularly cancer, heart disease, and chronic lung disease.[1,3]

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