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A Rare Presentation of Arterial Thrombosis after Venous Thrombosis in a Patient with Gastric Cancer

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Abstract

Background: Venous thromboembolism, which comprises deep vein thrombosis and pulmonary embolism and is a significant cause of morbidity and mortality among patients with cancer. The aim of the present study was to report a rare presentation of arterial thrombosis after venous thrombosis in a patient with gastric cancer.

Report of the Case: A 45 year-old female patient with locally advanced gastric cancer referred to our clinic. Before initiation of chemotherapy and in clinical examination, right lower leg pitting edema was observed. In color Doppler ultrasonography, deep vein thrombosis was documented, and she was treated with 60 unit /Bid of subcutaneous low-molecular-weight heparin and chemotherapy was continued. After two days despite a decrease of leg edema, pain in her leg increased, the distal part of the leg became cold and a decrease of pulsation was observed. Patient continued her therapy with diagnosis of phlegmasia alba dolens. After 7 days of this arterial thrombotic event that lasted for 48 hours, the life threatening event subsided.

Conclusion: We should be aware of the unusual clinical presentations of deep vein thrombosis as in this case with background of gastric cancer. The rare event of phlegmasia alba dolens occurs only in 1 % of venous thrombosis events and with close observation, correct diagnosis and on time treatment we can prevent the need for amputation.

Keywords: Deep vein thrombosis, phlegmasia alba dolens, venous thromboembolism.

Introduction

Venous thromboembolism (VTE) is a significant cause of morbidity and mortality among patients with cancer [1]. Although deep vein thrombosis (DVT) and pulmonary embolism (PE) are the most commonly encountered venous thrombotic complications, other vascular territories, such as the splanchnic veins and upper extremity venous system, can also be involved. With the increasing age and cancer prevalence, enhanced detection of incidental thrombosis and greater thrombogenicity of multiagent chemotherapeutic regimens, a steady increase in the incidence of cancer-associated thrombosis during the past 2 decades has been observed [2,3]. Thrombosis is a leading cause of death in patients with cancer [4], and is associated with higher mortality risk, irrespective of the cancer stage [5,6]. Unfortunately, despite the burden of VTE in oncology patients, there has been limited advancement in the management of cancer-associated thrombosis since the introduction of low-molecular-weight heparin for long-term therapy. Anticoagulant therapy in malignancy remains burdensome and is viewed as having a negative impact on patient quality of life [7]. It is also associated with a high risk of bleeding and may limit the therapeutic options to treat the underlying cancer [7]. Options for the initial treatment of cancer-associated thrombosis include low-molecular-weight heparin, unfractionated heparin, and fondaparinux. Although studies directly comparing these agents are lacking in oncology patients, data extrapolated from subgroup analysis of trials in unselected patients have indicated no significant difference in efficacy between low-molecular-weight heparin and unfractionated heparin in patients with cancer [8]. Here we report a rare

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presentation of arterial thrombosis after venous thrombosis in a patient with gastric cancer.

Report of the Case

A 45 year-old female patient with locally advanced gastric cancer referred to our clinic. She had right lower leg pitting edema in clinical examination, before initiation of chemotherapy with docetaxol+ 5FU+ cisplatin. In color Doppler ultrasonography, deep vein thrombosis was documented (Figure 1), and she was treated with 60 units /Bid of subcutaneous low-molecular-weight heparin, and the chemotherapy was continued. After two days despite decrease of the leg edema, pain in her leg increased, the distal part of the leg became cold and a decrease of pulsation was observed (Figure 2). Patient continued her therapy with the diagnosis of phlegmasia alba dolens. This phenomenon is a rare event after DVT and happens in only 1% of thrombotic events. Patient was followed with vascular surgical consult and close observation. This patient had a past history of diabetes and her blood sugar fluctuated during chemotherapy which we think might have been a trigger for this extensive thrombotic event. After 7 days of this arterial thrombotic event (9 days after the initiation of chemotherapy) which lasted for 48 hours and following better blood sugar control, this life threading event subsided (Figure 3).

Discussion

Venous thromboembolism, which comprises deep vein thrombosis and pulmonary embolism, is associated with significant morbidity and mortality [9]. VTE is a common complication in patients with malignant disease. Emerging data have enhanced our understanding of cancer-associated thrombosis, a major cause of morbidity and mortality in patients with cancer [10]. Effective prophylaxis and treatment of VTE have reduced mortality and morbidity and improved cancer patients' quality of life. Low-molecular-weight heparin is preferred as an effective and safe means for prophylaxis and treatment of VTE. It has largely replaced unfractionated heparin and vitamin K antagonists [11]. Occlusive clot formation in the veins causes venous thrombosis and the site most common is the deep veins of leg, called deep vein thrombosis. The clot can block blood flow and when it breaks off is called an embolism which in turn can damage the vital organs and may also cause phlegmasia alba dolens which is an arterial occlusion secondary to venous thrombosis [12]. Emphasis has been given to the potential risk of cancer therapy (both surgery and chemotherapy) in enhancing the risk for thromboembolic disease [13]. DVT is a major health problem and is estimated to have an incidence of 600,000 cases per year. Clinical signs and symptoms

Figure 1: Patient's leg before the initiation of chemotherapy regimen.

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Figure 2: Patient's leg after two days of chemotherapy and low-molecular-weight heparin therapy.

Figure 3: Patient's leg after 9 days of chemotherapy and low-molecular-weight heparin therapy.

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of DVT are unreliable, but spinal cord injury, lower extremity fracture, previous thrombosis, cancer, heart failure, obesity, and age greater than 70 years can be clinical risk factors for DVT [14, 15].

Conclusion

We should be aware of the unusual clinical presentations of deep vein thrombosis as in this case with background of gastric cancer. The rare event of phlegmasia alba dolens occurs only in 1 % of venous thrombosis events and with close observation, correct diagnosis and on time treatment we can prevent the need for amputation.

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