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EDİTÖRE MEKTUP / LETTER TO THE EDITOR

Abdominal vein thrombosis secondary to syphilis in an adolescent

Bir ergende sifilize ikincil abdominal ven trombozu

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To the Editor;

Syphilis is a sexual transmitted bacterial infection caused by *Treponema pallidum,* which has been known for centuries. The infection is a serious public health problem in low- and middle-income countries leading to morbidity and unfortunately mortality. The infection is divided into four stages; primary, secondary, latent and tertiary. Inadequate or no treatment of the disease leads to the progression of the primary stages to the secondary and tertiary stage. The latent stage consists of neurosyphilis, cardiovascular infections, aortic aneurysms and occurs during the fourth to fifth decades of life. Aortitis and other vasculopathies as a component of cardiovascular syphilis are caused by treponemal bacteria invading the vessel wall. The proliferation of bacteria on the vessel wall results in aneurysm, thrombosis, and vasculitis[1-3]. The incidence of venous thromboembolism (VT) reported to be 0.07 to 0.14 per 10.000 children, nevertheless the rate is increased more than 100 times in the inpatient children[4]. Renal vein thromboembolism (RVT) is an infrequent form of abdominal venous thromboembolism in children and is particularly seen in the neonatal period. The RVT has been related with nephrotic syndrome and renal transplantation in adolescants[5].

A sixteen-year-old boy presented to the emergency room (ER) with severe abdominal and back pain that was ongoing for 12 hours, and there was no history of abdominal injury or trauma. The patients clinical history stated that he had fever every two to three days about every month. He presented to the ER with fever twice before his current visit and no diagnosis was made. Due to the unexplained fever in these visits the pateint was directed to the Clinic of Pediatric Infectious Diseases (CPID). In this clinic, he was screened for sexual-transmitted diseases (human immunodeficiency virus (HIV), syphilis, hepatitis A, B, C) due to a history of sexual intercourse with a sex worker about two years ago. His physical examination in the ER presented that there was a mild to moderate tenderness in the right lower abdomen without a rebound. Laboratory investigations showed that hemoglobin level was 14.6 g/dL, the white cell count was 12.700/µL with an absolute neutrophil count of 9750 /µL and the platelet count was 288.000/µL. Blood chemistry included; blood urea nitrogen 22 mg/dL, creatinine 1.05 mg/dL, aspartate aminotransferase 42 IU/L, alanine aminotransferase 47 IU/L, total/direct bilirubin 1.1/0.5 mg/dL and lactate dehydrogenase (LDH) 340 mg/dL. Peripheral blood smear showed a shift to the left without blast cells. Abdominal ultrasonography was performed for the differential diagnosis of acute abdomen and the radiologist reported that there was a heterogenous chronic trombus occluding the veins starting from the level of the renal veins, including the vena cava inferior, the main iliac veins on both sides, and the proximal part of the external iliac veins. An increase in diameter was also observed in these veins. Additionally, it was also observed that the flow in the lumen was normal with mild diffuse wall thickening in the distal abdominal aorta and proximal parts of both common iliac arteries. These findings were confirmed with computed tomography (CT) and

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computed tomographic angiography (CTA). He was hospitalized at the clinic of pediatrics and treatment was started with low molecular weight heparin (LMWH). A family history of thrombosis was not present. In the thrombophilia profile, only a homozygous 4G/4G polymorphism in plasminogen activator inhibitor type 1 (PAI-1) gene was found. The patient was evaluated for connective tissue diseases by a Pediatric Rheumatologist due to an increased risk of thrombosis, but no finding was suspected in his history, physical examination, and laboratory tests. There was no evidence of paroxysmal nocturnal hemoglobinuria detected by flow cytometry.

Meanwhile, the western blot testing (WBT) resulted positive for syphilis. He did not recall a painless, ulserative lesion in or around his genitals. Other tests for sexual-transmitted infections were negative. The patient was treated with a total single dose of 2.4 million units of benzathine penicillin according to the proposal of CPID. The WBT test resulted negative for syphilis after four weeks of treatment.

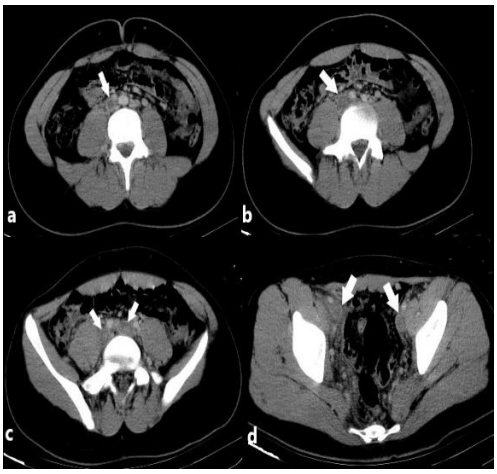

Figure 1. Axial contrast-enhanced CT sections of the abdomen and pelvis at the level of the inferior vena cava (a, b), common iliac veins (c), and the external iliac veins (d) show intraluminal thrombus as centrally-located hypodense filling defect. Note the enlargement of the thrombosed veins.

Warfarin was started on the 5th day of the heparin therapy. The heparin therapy stopped and the treatment continued with warfarin when the INR comes resulted between 2 and 3. Recanalization was observed at the control doppler USG during the fourth week. He still utilizes oral anticoagulant treatment. We planned oral anticoagulant treatment for three months and after three months, life-long acetylsalicylic acid use has been planned due to the presence of a thrombus affecting both the renal arteries and the inferior vena cava. Informed consent was received from the family.

Thrombosis is a situation involving a number of genetic and acquired factors or causes. It often occurs as a result of a combination of several factors. Thromboembolism is rare in children and adolescents however there is an increasing trouble in this population, in those who have an underlying disease or medical risk factors related to thrombosis. Hereditary causes of thrombophilia are deficiency of antithrombin III, protein C, or S, Factor V Leiden mutation, histidine-rich glycoprotein deficiency, and prothrombin-related thrombophilia[6-7]. Venous thromboembolism (VT) and arterial thrombosis happens during two peak times at childhood, in the neonatal and the adolescent age group. Hereditary thrombophilic risk factors are infrequent in childhood and adolescence than in adults. Risk factors of acquired thrombophilia including vascular injury (commonly related to central venous lines), malignancy, antiphospholipid syndrome, surgery, trauma, inflammatory diseases (especially systemic lupus erythematosus), diabetes mellitus, sickle cell anemia, and septicemia are prevalent in these age groups[8-12].

About one-sixth of untreated syphilis patients develop latent-stage syphilis after a latency period for decades. Sequels of latent syphilis include the progression of inflammatory lesions in every part of the body which can lead to cardiovascular or organ dysfunction[1,11]. The cardiovascular syphilis as a clinic manifestation of latent syphilis includes aneursym and thrombosis of the ascendan aorta[3].

In conclusion, syphilis is a factor that facilitates the development of thrombosis due to its causes particularly changes in the vessel wall of abdomen. The patient had both no other identified major thrombotic risk factors and diseases related to thrombosis. In the light of this information, the patient was evaluated as having thrombosis secondary to syphilis. Our patient is unique in the fact that it progressed to latent syphilis in a very short time after syphilis transmission and presented with renal veins thrombosis. History of sexual intercourse with a sex worker was the cornerstone of diagnosis.

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