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CASE REPORT

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Postpartum ovarian vein thrombosis after coronavirus disease

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Abstract

Corona virus outbreak started in December 2019, and the disease has been defned by the World Health Organization as a public health emergency. Coronavirus is a source of deep venous thrombosis (DVT) due to complications such as over coagulation, blood stasis, and endothelial damage. In this study, we report a 26-year-old pregnant woman with coronavirus who was hospitalized with a right ovarian vein thrombosis at Sultangazi- Haseki Training and Research Hospital in Istanbul. Risk classifcation for deep vein thrombosis (DVT) disease is of crucial importance for the forecast of coronavirus.

Keywords: *deep vein thrombosis; coronavirus; pregnant women; case reports; COVID-19 highlights*

Introduction

In December 2019, in Wuhan, Hubei Province, China, the first case of COVID-19 pneumonia was reported, and the disease spread rapidly to other parts of the world [1,2]. The novel coronavirus infection (COVID-19) is caused by the new coronavirus SARS-CoV-2 and is characterized by an exaggerated inflammatory response that can lead to severe manifestations such as adult respiratory syndrome, sepsis, coagulopathy, and death in a proportion of patients [3]. Ovarian vein thrombosis (OVT) is a rare thrombotic condition that mostly affects postpartum women; It is usually manifested by fever and lower abdominal pain that occurs weeks after birth [4,5].

Patients with coronavirus are at increased risk of thrombosis due to their over-coagulation status, blood stasis, and endothelial damage [6]. Ovarian venous thrombosis (OVT) is a very serious and rare disease that can occur at any time. It is more common in the period after childbirth period than in other cases and its incidence occurs in about 1 in 2000–3000 deliveries [5]. More than 80% of the after childbirth thrombosis cases are in the right gonadal vein [7]. Clinical symptoms such as abdominal pain, fever, nausea, vomiting and weakness are some of the symptoms of this type of thrombosis.

OVT is a condition that occurs in 0.02%–0.18% of pregnancies and 80%–90% of it can be identified on the right side of the affected cases [4-6]. Characteristic imaging findings on simple ultrasonography include tubular, hypoechoic adnexal, and/or iliac fossa masses. MRI offered improved sensitivity and specificity (92% to 100% and 100%, respectively), allowing for visualization of the entire course of the ovarian veins in patients with an inconclusive CT scan or ultrasonography [7].

In this case, we delivered a live baby at the 39th week of a pregnant woman who had a Covid infection at her 30th week of pregnancy. We treated the patient who was diagnosed with ovarian vein thrombosis after he presented with abdominal pain in the 10th postoperative day, in the light of the current literature.

Case presentation

A 25-year-old woman with a BMI index of 21 and a G4P3A1 (2 NSD, 1 C / S) delivered cesarean section 10 days ago presented to hospital with the complaint of abdominal pain. In the history of the patient, it was learned that he was infected with Covid 19 when she was 30 gestational weeks, and did not receive any antiviral treatment other than 4000 IU fraxiparine daily. There was no history of illness or thrombosis in the patient's medical history. The patient, who gave birth to a single live baby by cesarean in a 39 gestational weeks. She was discharged on the 3rd day post-op. After the onset of abdominal pain 1 week after, and was transferred to our clinic.

During his hospitalization, the patient's physical examination revealed sensitivity in the abdominopelvic examination, a body temperature of 37.4 °C, blood pressure of 100/60 mm Hg, pulse of 88 beats per minute, breathing rate of 14 breaths per minute, and Oxygen saturation of the blood of 95% at 5 L per minute of oxygen. Most routine blood tests, kidney function, electrolyte, and serum procalcitonin were normal. The COVID-19 PCR test performed during the delivery and hospitalization of the patient was negative. In routine blood tests, CRP 260 and Wbc values were 11.61, as high.

In the Trans abdominal USG, the diameter of the left ovarian vein was enlarged and thrombosis was observed with diffusion restriction in the lumen. In bilateral lower extremity Doppler USG, no appearance compatible with thrombus in the lower extremities was observed.

The MRI was taken from the abdomen and pelvis area. MR of the abdomen and pelvis with contrast revealed a markedly dilated left ovarian vein containing abnormal soft tissue attenuation material throughout, which indicates ovarian vein thrombosis. The appearance of a left ovarian vein in MRI images was permanent with signs of increased signal in this area, (OVT). Subsequent inferior abdominal MRI showed a thrombus starting from the left ovarian vein to the level of the left renal vein. There is enhancement in the vein walls (thrombophlebitis).

The patient was started on 2X6000 fraxiparine as treatment. In addition, Genta, Klindan and sesol were given for the treatment of thrombophlebitis. One week after his hospitalization, the patient was discharged because the ovarian vein thrombosis decreased in MRI. We were told that Fraksiparin should be continued for

1 month as prophylactic at exit. Later, he was followed by the Cardiovascular Surgery clinic. In the lower abdomen MRI performed one month later, ovarian vein thrombosis was observed to have decreased significantly.

Discussion

OVT occurs in about 1/600 to 1/2000 pregnancies. It presents as a triad of pain, fever, and abdominal mass [2]. It is hypothesized that OVT commonly occurs on the right side because the right ovarian vein is longer than the left and it lacks competent valves [2]. The right ovarian vein enters the inferior vena cava at an acute angle, which makes it more susceptible to compression [4].

In our case, we found left ovarian vein thrombosis contrary to what is usually detected. This may be an indication of the low incidence of our case.

Pathophysiologically, many studies have shown that patients with coronavirus are generally prone to water shortages to venous thrombosis due to fever and diarrhea, hypotension, secondary infections, and prolonged bed rest (?). So, to reduce the complications and mortality rate from coronavirus, it is essential to assess the risk of deep vein thrombosis.

It is noteworthy that we did not see any evidence of venous thrombosis in previous deliveries when we examined her previous medical history before COVID-19, and there were no records of the disease in the patient's family. Therefore, it is thought that such acute thrombosis occurred during COVID-19 disease.

Our report adds further document in Side effects such as obstruction of veins and arteries in patient with corona virus. Assessment and risk classification for DVT disease are of critical importance for the prognosis of coronavirus disease.

The initial coagulopathy of COVID-19 presents with prominent elevation of D-dimer and fibrin/fibrinogen-degradation products, whereas abnormalities in prothrombin time, partial thromboplastin time, and platelet counts are relatively uncommon in initial presentations. Coagulation test screening, including the measurement of D-dimer and fibrinogen levels, is suggested [8].

The most typical finding in patients with COVID-19 and coagulopathy is an increased D-dimer concentration, a relatively modest decrease in platelet count, and a prolongation of the prothrombin time [10].

Many patients with severe COVID-19 present with coagulation abnormalities that mimic other systemic coagulopathies associated with severe infections, such as disseminated intravascular coagulation (DIC) or thrombotic microangiopathy, but COVID-19 has distinct features [9].

On the other hand, OVT mostly occurs in the puerperium period as a result of postpartum endometritis and accompanying flow changes in the venous system (Hodgkinson CP, 1953).

Complications of symptomatic OVT include sepsis and thrombus extension (25% to 30%) to the inferior vena cava or left renal vein or rarely pulmonary embolism.

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Asymptomatic OVT is more common and may be benign, with a 30% incidence of pelvic (iliac and ovarian) vein thrombosis reported on screening magnetic resonance imaging (MRI) after vaginal delivery [5]. Since high fever accompanying was not observed in our case, blood culture was not studied.

The fact that the patient did not receive any antiviral treatment when he had a Covid infection when he was 30 weeks old may have contributed to the ovarian vein thrombosis that occurred in the postoperative period. Perhaps for this reason, the tendency to coagulation during pregnancy may have caused this rare condition to occur.

Our patient did not have any risk factors for deep vein thrombosis, and he had no history of vein thrombosis in both previous pregnancies and in the postpartum period. Contrary to expectations, vein thrombosis was observed in the left ovarian vein instead of the right ovarian vein in our patient. Considering this situation, having a COVID-19 infection during pregnancy should be considered as a risk factor for deep vein thrombosis.

Conclusion

Coronavirus is a source of deep venous thrombosis (DVT) due to complications such as over-coagulation, blood stasis, and endothelial damage. Risk classification for deep vein thrombosis (DVT) disease is of crucial importance for the forecast of coronavirus. With Doppler ultrasound, it is possible to diagnose the disease completely. However, CT and MRI fully confirm the diagnosis if the diagnosis of the disease is uncertain. The main basis of treatment is the conservative tendency whereas the surgical tendency is considered for persistent DVT. DVT is important to keep in mind in postpartum developing pelvic pain who had COVID-19 disease during pregnancy.

Author contributions

Compliance with ethical standards.

Conflict of interest

The authors declare that there is no conflict of interests that prejudices the impartiality of this scientific work.

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