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The Missing Inferior Vena Cava With Acute on Chronic Undiagnosed DVT'S

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Clinical Vignette

A 45 year old Caucasian man presented to the emergency department with worsening left leg swelling and pain since four days prior to visit. Symptoms were progressively worse over the last 4- days and associated with moderate to severe discomfort and tingling sensation involving the entire left leg. He had 3- month history of mild swelling of the left lower extremity, heaviness and tingling , but the symptoms become significantly worse as described.Denied any recent trauma or travel history. He had been taking testosterone injections 200 mg intramuscularly every week for the past 4 months prescribed by local Low T- center provider for improving his mental health. There was no significant family history of any disease states and no family h/o of clotting disorder.

The Physical examination revealed that the entire left lower extremity has 3+ edema, increased temperature and had a light red color. No neurovascular deficit was present. The pulsations of the arteries of the lower extremities were intact. There were varicose veins on the left lower extremity and pain on palpation over the deep veins with areas of induration over the deep veins of the left leg.

Because we suspected Left lower extremity deep venous thrombosis we performed Venous Doppler of the lower extremities. The venous Doppler study showed complete thrombosis of left lower extremity deep veins and left common and external and Internal Iliac veins and calf veins/DVT/. Also, there was acute deep venous thrombosis of the right commoniliac vein.

We performed venogram to assess the ability of treatment with thrombolytic or mechanical thrombectomy. The venogram showed extensive left lower extremity DVT involving the left iliac veins with suspected chronic occlusion of the left common iliac vein and acute on top of it deep venous thrombosis of the deep venous system on the left lower extremity.

CT of the abdomen and pelvis revealed chronic IVC occlusion with extensive cavo-portal collaterals, and a short segment acute right common iliac DVT. The IVC at the common iliac vein confluence was diminutive. Large bilateral parapelvic cysts were also noted without hydro nephrosis. What would be the appropriate management option for this patient?

A. Thrombolysis by Interventional Radiology

B. Initiate Anticoagulation

C. Continue to observe as an inpatient

D. Discharge and schedule outpatient follow up

Introduction

Deep venous thrombosis secondary to congenital anomalies involving Inferior Vena Cava (IVC) are extremely rare (Figure 1). They are seen in up to 5% of the younger patient population with confirmed DVT (Figure 2). Cautions should be taken to modify the risk factor that can cause hypercoagulable states. One such risk factor is IM testosterone, which can cause polycythemia and stasis of blood, thereby increasing the risk of clot formation, especially in patients who have hypercoagulable state. This is why testosterone is contraindicated in patients with hypercoagulable disorders. It is important to consider IVC anomalies in younger population who present with DVT to prevent life threatening pulmonary embolisms, acute limb ischemia and chronic leg ulcers in the future.

Case Report

A 45 year old Caucasian man was evaluated in the emergency department with 3 month history. He had 3- month history of mild swelling of the left lower extremity, heaviness and tingling which worsened 7- days prior to visit. PT reported painful swelling in the groin,

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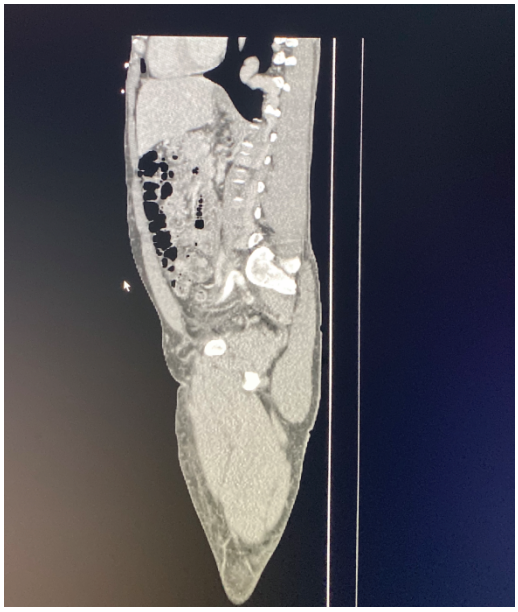

Figure 1: Deep venous thrombosis secondary to congenital anomalies involving inferior vena cava (IVC)

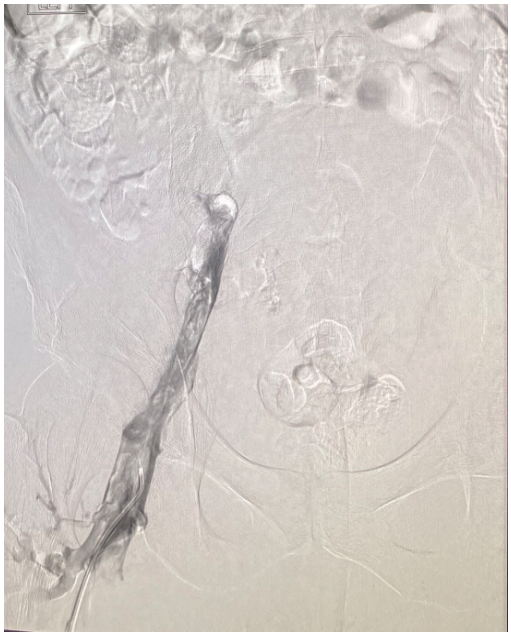

Figure 2: Younger patient population confirmed with DVT

which progressed to involve the entire left leg. It was associated with moderate to severe discomfort and tingling sensation. He denied any family history, recent trauma or travel, smoking, however, endorsed to have a similar swelling in his left groin three months ago along with gross hematuria while he was incarcerated. He was diagnosed with UTI during that episode, treated with antibiotics and his symptoms resolved.

During the current visit, he had left lower extremity 3+ edema compared to the right lower extremity without neurovascular deficit, redness and varicose veins and pain on palpation over the deep vein system of the left lower extremity with areas of induration over the deep veins. Arterial pulsations on both lower extremities were preserved.

The patient was found to have polycythemia on CBC with HB - 18.4 g/l and HCT- 55%.Because of suspicion of deep venous thrombosis venous Doppler of the lower extremities was performed which was consistent with DVTof the entire deep venous system of the left leg extending all the way up into common iliac veins and Right Common Iliac vein. The clot was not completely hypoechoic suggesting that part of it to have been chronic with acute component as well- the ultra-sonographic diagnosis was acute on chronic Deep Venous Thrombosis/DVT/.

The patient also admitted using intramuscular testosterone cypionate 200 mg weekly for the last 4 months given in the Lo T-Center to improve his cognition.

Hypercoagulable work-up was negative for Lupus anticoagulants, anticardiolipin antibodies- Beta -2 glycoprotein- 1 antibodies, Factor V Leiden mutation and prothrombin 20210 mutation Lipoprotein /a/ level was normal. Also JAK 2 mutation was negative.

Interventional Radiology was consulted for catheter directed thrombolysis. A venogram by the left popliteal approach was performed which showed extensive Left lower extremity acute DVT involving the left iliac veins and the deep venous system of the Left lower extremity distal to it with suspected chronic occlusion of the left common iliac vein. The Left common iliac vein could not be crossed despite exhaustive attempts.

This was followed by CT of the abdomen and pelvis with IV contrast was obtained which revealed chronic occlusion of congenitally malformed Inferior Vena Cava/IVC/ with extensive cavo-portal collaterals, the acute short segment also Right common iliac acute DVT. The IVC at the Left common iliac vein confluence was diminutive. Interventional radiologists and vascular surgery recommended extensive ileocaval reconstruction, but patient preferred conservative management.

Hematology was consulted and the patient was started on anticoagulation with therapeutic dose heparin, which was later used as a bridge to warfarin. The patient was advised not take IM testosterone for life. He improved during the hospital course and was discharged on therapeutic doses of Coumadin from the hospital.

Discussion

Congenital anomalies involving the IVC are rare and are under diagnosed [2]. Such anomalies occur in 0.3% of otherwise healthy individuals and in 0.6-2% of patients with other cardiovascular defect [2]. There are no data currently available regarding prophylactic anticoagulation for these patients. This particular patient population is susceptible to clot formation at baseline, but their risk rises exponentially if they are exposed to factors that can contribute to hypercoagulable state [3,4]. Treatment is with anticoagulants/ thrombolysis when appropriate. If not, then vascular surgery is required to correct the underlying anomaly.

The other main problem with our patient was the use of IM Testosterone cypionate200 mg intramuscularly every week. The indication for prescribing Testosterone was improving his mental health which is not indicated for using the product. Seconds - as per literature data Testosterone can cause DVT usually in the first 3-months after its initiation [5,6].

Third- usually those patients who develop clots on Testosterone have a Factor V Leyden mutation or Antiphospholipidsyndrome, which our patient did not have [7].This favors the argument that Testosterone on its own has thrombogenic properties, especially in patients with predisposing factors like our patient with congenital anomaly of IVC.

Fourth- we believe that the chronic clot was formed because of congenital anomaly of IVC and the acute, because of the recent Testosterone use [8].

Fifth- this article underscores the need of thorough investigation and following the American endocrinology Society guidelines about the indications and contraindications of the testosterone use.

References

1. Cho BC, Choi HJ, Kang SM, Chang J, Lee SM, et al. Congenital absence of inferior vena cava as a rare cause of pulmonary thromboembolism. Yonsei Med J. 2004 Oct;45(5):947-951.
2. Ackula H, Mosalpuria K, Tandra PK. Congenital agenesis of inferior vena cava as a rare cause of deep vein thrombosis: Case report and review of the literature. Case Rep Intern Med. 2016; 3(3):4.
3. Puja SS, Vatsal ML, Parag PB, Jain V, Bajaj K. Inferior vena cava anomaly: a risk for deep vein thrombosis. N Am J Med Sci.2014 Nov;6(11):601-603.
4. Gayer G, Luboshitz J, Hertz M, Zissin R, Thaler M, et al. Congenital Anomalies of the Inferior Vena Cava Revealed on CT in Patients with Deep Vein Thrombosis. AJR Am J Roentgenol. 2003 Mar;180(3):729-732.
5. Glueck CJ,Goldenberg N, Wang P. Testosterone therapy, thrombophilia, venous thromboembolism and thrombotic events. J Clin Med, 2019 Jan;8(1):11.
6. Glueck CJ, Goldenberg N, Budhani S, Lotner D, Abuchaibe C, et al. Thrombotic events after starting exogenous testosterone in men with previously undiagnosed familial thrombophilia. Transl Res. 2011 Oct;158(4):225-234.
7. Glueck CJ, Prince M, Patel N, Patel J, Shah P, et al. Thrombophilia in Patients With Thrombotic Events After Starting Testosterone Therapy. Clin Appl Thromb Hemost. 2016 Sep;22(6):548-553.
8. Glueck CJ, Goldenberg N, Budhani S, Lotner D, Abuchaibe C, et al. Thrombotic events after starting exogenous testosterone in men with previously undiagnosed familial thrombophilia. Transl Res. 2011 Oct;158(4):225-234.