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Case Report

Urological Cause of Reversible Deep Vein Thrombosis

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Abstract

Background: Venous thrombosis is the formation of blood clots in the deep or superficial veins and usually affects the veins of the pelvis, femoral veins or popliteal veins. Deep Vein Thrombosis (DVT) occurs most frequently in women aged 20-45 years old and men aged 45-60 years [1] , and may be triggered by major surgery, malignant syndromes, trauma, extrinsic compression, presence of central venous catheter, hospitalisation [2]. The diagnosis of DVT can be easily confirmed by Doppler ultrasound of the veins.

Case Presentation: We present the case report of DVT caused by distended urinary bladder in a patient with prostatic hypertrophy after a recent urinary bladder lithiasis surgically treated. The patient was treated with anticoagulants , the bladder was evacuated with remission of thrombosis.

Conclusions: Venous stasis is acceppted as a predisposing factor for DVT as stated in the Virchow triad [3]. Review of the literature recognizes a few cases of DVT triggered by acute retention of urine. Clinicians should monitor pacients after urinary interventions at risk for acute urinary retention, for thrombotic complications not only triggered by surgical procedures but also by extrinsec compression due to distended urinary bladder.

Abbreviations: DVT: Deep Vein Thrombosis; BP: Blood Pressure; PSA: Prostatic Specific Antigen

Introduction

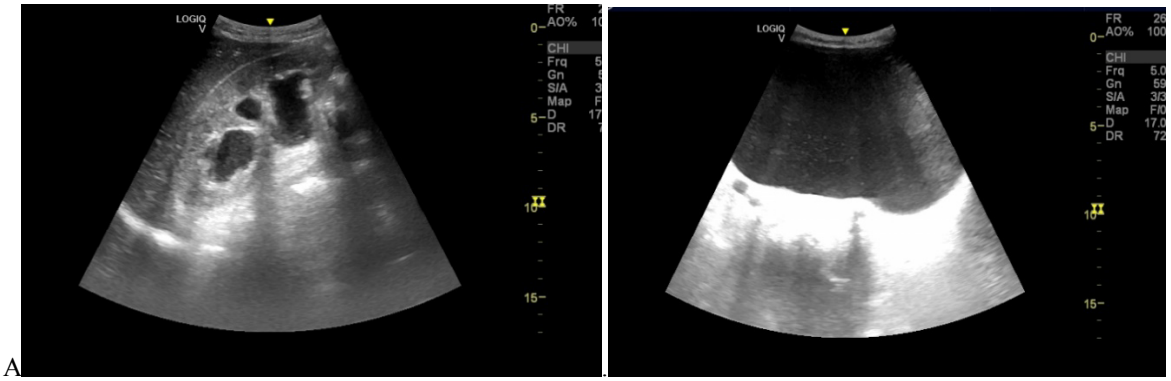
Venous proximal thrombosis can be an important complication of hospitalisation. The screening for DVT should be done for every patient with new onset lower extremity edema. Venous ultrasound is an accessible diagnostic method and finding a venous thrombus should lead to identification of the cause following the Virchow triad [3] of vascular stasis, endothelial injury and hypercoagulability. In this case report, we found a patient with DVT caused by extrinsec venous compression due to enlarged bladder caused by urinary retention, excluding other common causes.

Case Presentation

A 52-year-old man, smoker, active person, known with untreated mild arterial hypertension, benign prostate hyperplasia (90cc), bladder lithiasis surgically treated 3 weeks before presentation, with suppressed postoperative urethral catheter 1 week after the surgery, presents 2 weeks after removal of the catheter for slight pain and edema of lower limbs more intense on the left side, occurring approximately 24 hours prior admission. He also presents with constipation and abdominal meteorism progressively aggravated after hospital discharge. On the physical examination we notice increased volume of left inferior limb with warm, cyanotic skin, poorly positive Homans sign, rhythmic cardiac sounds, 85bpm, no pathological murmurs, BP of 140/100 mmHg , normal respiratory exam, normal abdominal exam except increased mass in the hypogastric area, spontaneously painless, painful at deep palpation and oliguria for the past 24 h. Resting electrocardiogram shows sinus tachycardia with a cardiac frequency of 105 bpm, without pathological changes. Blood samples reveals inflammatory syndrome , Fibrinogen = 439 mg/dl, decreased renal function (Creatinine = 12.68 mg / dl, Urea =

267.10 mg / dl), mild hepatic cytolysis, prostate specific antigen (PSA) in normal ranges,positive D-Dimers, sterile urine.

Abdominal ultrasound presents bilateral grade 2 ureterohydronephrosis (Figure 1A) and important distention of the urinary bladder (Figure 1B) without any other pathological changes. An urethral catheter was inserted and approximately 13 liters of normochromic urine were evacuated in 24 hours.



A B.

Figure 1: A. Grade 2 ureterohydronephrosis. **B.** Distended urinary bladder.

The venous Doppler examination of the inferior extremities revealed thrombosis of external saphenous venous on the right side and thrombosis in 1/3 proximal left superficial femoral vein (Figure 2). The echocardiographic examination is normal.

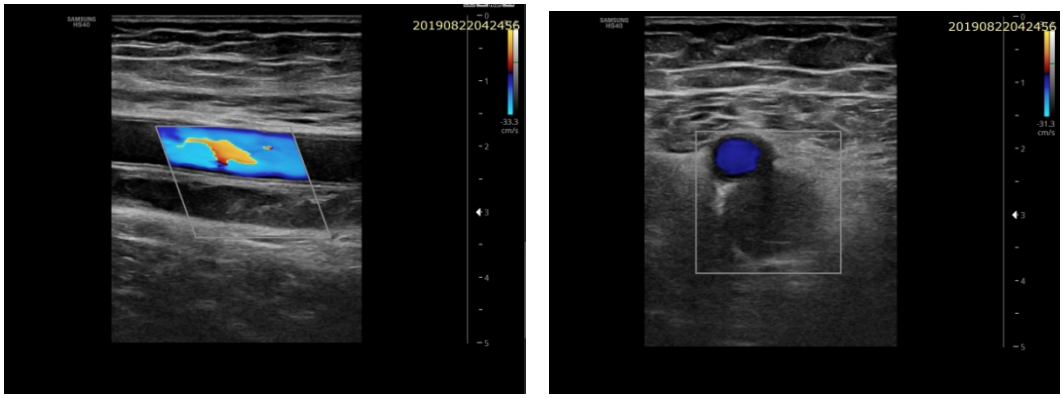


Figure 2: Thrombosis of the1/3 proximal left superficial femoral vein.

The patient receives treatment with unfractionated heparin, platelet antiagregants, calcium blockers and beta blockers. 24 hours after resumption of diuresis, creatinine decreased significantly with normal values at 48 hours, with improvement in venous symptomatology, the disappearance of venous thrombus and improvement of digestive symptoms. The patient is discharged with the urethral catheter, oral anticoagulant for 3 months , beta blocker, inhibitor of conversion enzyme, antithrombotics and alfa-blocker. Transurethral prostatic resection is performed two months later. Clinical and paraclinical screening tests for neoplasia were negative, and the remission of symptomatology after bladder evacuation suggests that venous thrombosis was caused by the bladder compression.

Discussions

Urinary retention in adults can be triggered by numerous factors : obstruction, infection, inflammation, neurologic disfunction, pharmacologic, genitourinary procedures etc, but the most common cause remains the benign prostatic hyperplasia [4]. Administration of α-blockers and 5-α-reductase inhibitors in men with benign prostate hyperplasia lowers the risk of further obstructive urinary complications [5].

Urinary bladder distension can be a cause of compression of pelvic veins simulating DVT [6,7], but prolonged compression may cause lower vein thrombosis in some cases. Although acute urinary retention with significant bladder distension is a common

urological pathology, however, venous thrombosis caused by it is quite rare, only a few cases being described in the literature [8-11]. The cause for which it occurs in certain patients is not elucidated, especially in young patients with no other risk factors for venous thrombosis. Even if is not a major risk factor urinary retention can cause proximal DVT with high risk of pulmonary embolia and worse prognosis for the patient that`s why thrombosis screening should be done in patients presenting with lower limb edema.

Conclusions

Urinary retention should be prevented and treated in patients at risk. Patients at risk for urinary retention should be informed of the clinical signs and advised to ask quick medical help in order to avoid further complications. Lower limb edema in patients with urinary retention should lead to screening for venous thrombosis due to the risk of fatal complications the longer the obstruction and the delayed diagnosis.

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