Common iliac vein compression secondary to significant bladder distension

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Disclosure

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I have the following potential conflicts of interest to report:

☑ Consulting – Cook Medical®
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Unilateral lower extremity (LE) edema is a typical clinical presentation of patients with deep venous thrombosis (DVT) or extrinsic deep venous compression (EVC).

May & Thurner syndrome, pelvic tumors and retroperitoneal fibrosis are known causes of EVC.

We describe three patients with unilateral lower extremity edema, secondary to significant bladder distension.
History

Venous obstruction by a distended urinary bladder was first described in 1960, by Carlsson and Garsten.

Patient 1

- Male, 61 y.o.
- Left lower-extremity swelling
- Duplex scan — Negative for thrombus but impaired proximal flow.
- Adenocarcinoma of the prostate with bone metastases
PhleboTc

Pre

After Bladder evacuation
Treatment - Patient 1

- Prostatectomy
- Radiotherapy
- Chemotherapy
Patient 2

- Female, 71 yo
- Bilateral lower-extremity swelling
- Surgical resection of grade IV glioma
- Hemiparesis and neurogenic bladder
- Duplex scan – No DVT but there was compression of the bilateral common iliac by the distended bladder (residual volume of 1.444 ml).
Patient 2
Ultrasonography

Artery

Iliac vein compression
Treatment - patient 2

- Cystostomy
- Resolution of edema
Patient 3

- Male, 38 yo
- Schizophrenia (biperiden – anticholinergic agent)
- Right lower extremity swelling
Patient 3

Duplex scan – Extensive occlusive thrombosis extending from the right popliteal vein into the right common femoral vein.
Treatment - Patient 3

- Catheter directed thrombolysis
- Popliteal access
- rt-PA for 24 hours
Treatment - Patient 3

Pre – iliac vein phlebography

Post – iliac vein phlebography after bladder evacuation (1.250 ml)

Bladder distention
Treatment - Patient 3

- Post catheter directed thrombolysis
- Complete thrombolysis
- Anticoagulation - Rivaroxaban®
- Discontinuation of Biperiden (difficulty in emptying the bladder)
- Urodynamic study - normal
Discussion

- Several disorders may cause bladder distension
  - Neurogenic bladder (diabetes/autonomic dysfunction)
  - Pelvic or abdominal tumor
  - Enlarged prostate
  - Iliac aneurysm
  - Drugs (side effects)
  - Urethral stricture (calculi/stenosis)

Case Reports in Urology 2015
Internal M Journal 2012
Conclusions

- Urinary bladder enlargement is a potential cause of DVT and/or lower limb edema.

- Treatment involves restoration of vein patency by urinary drainage and/or treatment of the cause of the urinary obstruction, combined with DVT treatment, if present.

- Bladder distension can be the cause of edema or DVT.
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