

Post-extracorporeal shockwave lithotripsy perirenal haematoma

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DESCRIPTION

A previously healthy 50-year-old man presented with intermittent left flank pain for 3 months. The patient denied any history of diabetes and hypertension. On evaluation with X-ray Kidney-Ureter-Bladder and ultrasound (USG) of abdomen, he was found to have left upper ureteric calculus (size: 13 mm) with left mild hydronephrosis and normal right kidney. He subsequently underwent uneventful extracorporeal shockwave lithotripsy (ESWL) with Dornier compact alpha electromagnetic lithotripter for the calculus. Three thousand shockwaves were delivered to the stone. The procedure was uneventful and the patient was discharged. Twenty-four hours later, the patient presented with severe left flank pain. On clinical examination, he had tachycardia (pulse rate: 100/min), normal blood pressure (138/76 mm Hg) and tenderness in the left flank region. Laboratory examination revealed the following parameters:

- ▶ Haemoglobin: 10.2 g/dL.
- ▶ Haematocrit: 30.6%.
- ▶ Total leucocyte count: 7500 /mm³.
- ▶ Platelet count: 3.5 lacs /mm³.
- ▶ Blood urea: 44 mg/dL.
- ▶ Serum creatinine: 0.9 mg/dL.
- ▶ Prothrombin time: 13 s.
- ▶ Activated partial thromboplastin time: 32 s.
- ▶ International normalised ratio: 1.0.
- ▶ Urine microscopy: 20 red blood cells/high power field.

Evaluation with USG revealed left perinephric haematoma. On further evaluation with contrast-enhanced CT (CECT) scan of abdomen, there was presence of left upper ureteric calculus with a large perinephric haematoma in left kidney (figure 1). However, no evidence of active contrast

extravasation was present. The ureteric calculus was 12 mm in size on CECT; thus, it had not decreased much in size (the initial size was on USG). The patient was admitted and managed with bed rest, serial monitoring (vitals, haematocrit and haemoglobin) and received intravenous fluids, analgesics and antibiotics. During hospital stay, there was no significant drop in haemoglobin and no blood transfusions were required. The patient improved symptomatically within 1 week and was discharged. Subsequently, he underwent stone removal with retrograde intrarenal surgery (RIRS) using flexible ureteroscope with laser lithotripsy.

Several risk factors including hypertension, diabetes, coronary artery disease, obesity, clopidogrel use, aspirin use and ESWL parameters (including increased number of shock waves, voltage and frequency of shockwaves delivered to the kidney) are associated with increased rates of renal injury and perirenal haematoma formation.¹ Management of post-ESWL perirenal haematoma should be individualised. Large perinephric haematomas may also be successfully managed with conservative approach including bed rest, serial monitoring of vitals, haematocrit and haemoglobin. Silberstein *et al* described a case of a 50-year-old hypertensive man who developed perinephric haematoma 12 hours after undergoing ESWL for upper ureteric calculus/stone-debris.² The patient demonstrated active contrast extravasation on contrast CT scan; however, repeat CT angiography revealed no extravasation and the patient was managed conservatively with supportive care and blood transfusions.² RIRS has been proposed to be an effective modality for patients with ESWL failure, musculoskeletal deformities, morbid obesity and even patients with bleeding diathesis.³ Despite absence of any risk factors and use of proper ESWL procedure, our patient developed a large perinephric haematoma that was managed conservatively and later on complete stone removal was done with RIRS.



Figure 1 Contrast-enhanced CT scan of abdomen depicting left upper ureteric calculus with evidence of left perinephric haematoma.

Learning points

- ▶ Post-extracorporeal shockwave lithotripsy (ESWL) renal injury and perinephric haematoma can occur secondary to increased number, voltage and frequency of shockwaves delivered to the kidney.
- ▶ Large perinephric haematomas post-ESWL may also be successfully managed with conservative approach.
- ▶ Retrograde intrarenal surgery can be used as a salvage procedure for management of residual stones post-ESWL.



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