

## Endourology

## Bladder stone following intravesical migration of surgical clip five years after radical prostatectomy

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## ABSTRACT

Bladder stone formation on iatrogenic foreign bodies following radical prostatectomy is an uncommon post-operative complication. We present the case of a bladder lithiasis that developed around a metallic clip five years after radical retropubic prostatectomy.

## Introduction

Prostate cancer is the most frequent non cutaneous cancer in men to which multiple treatment modalities are being offered, yet, radical prostatectomy remains the gold standart treatment. During this procedure, vascular clips are used for hemostatic control as they have proved their safety and efficacy; however, migration of these clips has been reported throughout the literature causing lower urinary tract symptoms. However, intravesical stone formation on the migrated clip has been reported only twice in the literature and here we add a third case where a bladder stone was discovered on the migrated clip five years after open radical retropubic prostatectomy.

## Case

This is the case of a 53-year-old male patient who was diagnosed five years ago with a T1c Gleason 7(4 + 3) adenocarcinoma of the prostate. PSA at that time was 8 ng/ml and bone scan was negative. The patient underwent an open retropubic radical prostatectomy during which metallic clips were used. The pathologic studies of the prostate revealed a T3a adenocarcinoma and the patient was discharged without any complication.

He presents to our clinics for severe obstructive symptoms and macroscopic hematuria starting a year ago. Urine culture was negative and total serum PSA was 0.01 ng/ml. A bladder ultrasonography was performed showing a 2.5 cm intravesical lithiasis with a significant post-void residual (PVR) of 180 ml. The calculus was fragmented using a Holmium: YAG laser lithotripsy introduced in a resectoscope sheath.

During laser fragmentation, a metallic surgical clip was identified at the core of the calculus (**Photo 1**), explaining the pathophysiology of the disease. The patient was discharged the following day.

## Discussion

It is well known that the majority of bladder stones encountered in the adult population are due to lower urinary tract obstruction or to a foreign material acting as a nidus for stone formation.<sup>1</sup> Most intravesical foreign bodies result from iatrogenic interventions like urogynecologic interventions where Hem-O-Locks, vascular clips and other devices are regularly used. However, few reports exist concerning stone formation on iatrogenic foreign bodies following radical retropubic prostatectomy.<sup>2</sup> The formation of bladder stone on vascular metallic clip is therefore possible, but extremely rare.<sup>3,4</sup>

We presented here a case of intravesical clip migration after open radical prostatectomy serving as a nidus for intravesical stone formation, causing lower urinary tract symptoms. Eren et al. reported similar cases thirteen and ten months following laparoscopic radical prostatectomies.<sup>4</sup> In our case, the stone developed five year after the operation. These three cases invite us to consider stone formation on migrated clips in patients who present with persistent urinary tract symptoms and hematuria following radical prostatectomies, even years after surgery. Post-operative complications were also reported by Turini III et al. who did not detect bladder stones but reported lower urinary tract symptoms and infections in patients who had weck clip migration following robotic-assisted laparoscopic radical prostatectomies (RALPR).<sup>5</sup> These foreign body migrations can be dramatic as they can require return to

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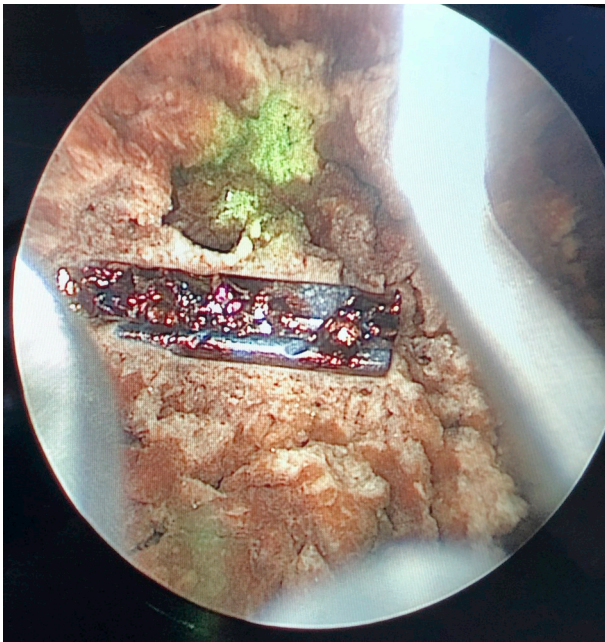
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**Photo 1.** Metallic surgical clip identified at the core of the calculus during laser fragmentation.

the operating room where interventions such as cystolitholapaxy, laser lithotripsy, and fulguration of bleeding sites become necessary.<sup>5</sup> As such, the aim of this article is to raise awareness among surgeons of the risk that these devices carry if used around the vesico-urethral anastomosis.

### Conclusion

It appears that vascular clips used during radical prostatectomy can migrate and cause lower urinary tract symptoms directly or indirectly by serving as a nidus to bladder stone formation. This incident raises the question about the safety of using these foreign bodies and surgeons

must be aware of this complication as the timing, the clinical presentation and the consequences can vary widely.

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### Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanied images.

### Ethical approval

No ethical approval needed.

### Declaration of competing interest

The authors declare that they have no conflict of interest.

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The work has been reported in line with the CARE criteria for case reports.

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