Prostatic urethral lift (PUL) clip causing postoperative pain after holmium laser enucleation of the prostate (HoLEP)

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ABSTRACT

Few series exist in the literature of holmium laser enucleation of the prostate (HoLEP) after prostatic urethral lift (PUL). Even less well known are potential complications seen after a patient undergoes PUL followed by HoLEP. We present our case of a unique clinical finding of a PUL clip and suture found in the urethra of a patient after HoLEP.

1. Introduction

Prostatic urethral lift (PUL) is a minimally invasive option to treat benign prostatic hyperplasia (BPH) shown to improve symptoms and flow rate while avoiding retrograde ejaculation.1 However, PUL is reported to have a 6% reoperation rate per year.2 A safe and effective re-operation technique is holmium laser enucleation of the prostate (HoLEP), but the metallic implants following PUL can cause technical complications during the procedure.3 The implants have been shown to distort anatomy or require grasper or basket retrieval during HoLEP.4 In addition, cases have caused morcellator damage and the use of multiple sets of costly disposable morcellator blades per case.4,5

We present a unique clinical finding in a patient who had undergone PUL followed by HoLEP. To our knowledge, this is the first documented clinical finding or complication of its kind in the literature.

2. Case presentation

Our patient was a 60-year-old male who was initially seen for elevated prostate specific antigen (PSA) levels and lower urinary tract symptoms (LUTS) in our prostate clinic. His PSA was as high as 15.7. He had no other medical problems and was otherwise healthy. His only prior surgery was a UroLift (Teleflex Interventional Urology Business Unit; Pleasanton, CA), also known as a prostatic urethral lift (PUL). He was also taking tamsulosin 0.4mg daily at the time of his consultation. His post-void residual was noted to be 192 cc and he had an 84 cc prostate measured on an outside prostate magnetic resonance image (MRI).

Prior to his PUL procedure, his main complaint was urinary urgency. He had some mild relief at first but then began to experience suprapubic pressure and pain, nocturia, hesitancy, and incomplete emptying.

After discussion with the patient, a decision to proceed with HoLEP was made. Using a 550-μm laser fiber HoLEP was performed with laser settings of 1.2 J/60 Hz (72 Watts) for dissection and 1 J/20 Hz (20W) for hemostasis. Attention was made to evacuate any sutures or clips seen during the procedure from the prior PUL. Final pathology showed 90 g of benign prostatic tissue which was consistent with the size measured on prostate MRI.

On follow-up at about 6 weeks after surgery, the patient had a PSA level of 0.9 and mentioned that over the last several weeks he developed a ‘splinter-like’ sensation in the distal urethra near the tip of his penis. On examination, he had focal tenderness near the meatus. The patient reported a good stream and relief from his lower urinary tract symptoms but due to his complaint, investigation with cystoscopy was performed to evaluate the urethra.

In the clinic under topical lidocaine, cystoscopic examination revealed a metal clip in the distal urethra, near the meatus (Fig. 1). Attempts were made to grasp the clip with cystoscopic graspers; however, this was difficult due to the distal nature of the clip. A pair of fine forceps was used to grasp the clip and remove it from the urethra revealing a suture attached to the metal clip, consistent with the clips seen in the PUL system (Fig. 2). The scope was reintroduced to evaluate...
the HoLEP defect and exclude the presence of any other foreign bodies in the prostate fossa or bladder. The patient had immediate relief of some of his pain and continued to improve over the next week. There were no further complications. The patient has done well since removal of the PUL clip and suture and has been urinating well. He will follow-up with our department as needed.

3. Discussion

Although PUL has allowed symptomatic relief for many patients, reoperations may occur due to inadequately controlled symptoms. HoLEP is commonly used for BPH symptoms refractory to PUL, but the metallic implants left in the prostate from PUL may cause technical difficulties or complications during HoLEP including difficult visualization or morcellator damage. Because of the increasing use of HoLEP following prostatic urethral lift, awareness of the complications can help decrease morbidity.

In our case, a patient who underwent PUL and HoLEP later reporting distal urethral pain was discovered to have a clip remaining from his procedures. To our knowledge, this is the first reported occurrence of this type of complication. Previously, complications have been reported during the HoLEP procedure, but this case reveals that postoperative complications may occur as well.

It is possible that the clip eroded or migrated into the urethra. However, more likely this is a case of retained clip after HoLEP. PUL clips are oriented with a Nitinol capsular tab at the lateral edge of the prostate and a stainless-steel urethral end piece at the medial edge (urethral edge). Between the two clips is a permanent suture which travels through the prostatic tissue to help open the prostatic urethra for better urinary flow. As the HoLEP is performed, clips are encountered and generally removed via detachment with the laser and targeted removal as is done with a prostate chip from a TURP (transurethral resection of the prostate).

As the usage of HoLEP following PUL increases, knowledge of how to manage the metallic implants intraoperatively is helpful for the success of the procedure. In addition, future cases may reveal new complications. Physicians performing this procedure should be aware that if a clip is left in place, that pain may occur in the future if it is lodged into surrounding structures.

Furthermore, it has been our practice to perform office cystoscopy at the 3 months follow-up visit in all men who have had HoLEP following PUL to exclude occult retained foreign bodies. Evaluation of the necessity of this practice is ongoing.

4. Conclusion

PUL and HoLEP are becoming more common in the field of urology. Naturally, we will see increased numbers of patients undergoing multiple, subsequent BPH procedures. The possibility of retained PUL clip should be part of the counselling process in patients undergoing subsequent BPH procedures. With limited data available on outcomes in patients who undergo PUL followed by HoLEP, we present a unique clinical finding notable for urologists, particularly those performing HoLEP and PUL.

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