

# Intravesical Stone Formation around a Hem-O-Lok Clip after Laparoscopic Radical Prostatectomy

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We report a case of a bladder stone that formed on a Hem-o-lok clip used to suture an urethrovesical anastomosis. A 65-year-old man presented with intermittent perineal pain, dysuria, and gross hematuria 4 years after laparoscopic radical prostatectomy for localized prostate cancer. Cystoscopy demonstrated a stone formed around a Hem-o-lok clip that had possibly eroded into the urethra. Ultrasonic lithotripsy of the bladder stone with endoscopic extraction of the Hem-o-lok clip was performed. (**Korean J Urol 2009;50:613-614**)

**Key Words:** Prostatic neoplasms, Laparoscopy, Prostatectomy, Calculi

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Foreign bodies in the urinary tract are a known source of stone formation. Erosion of a surgical clip into the urethra in men who have undergone laparoscopic radical prostatectomy (LRP) has been very rarely reported.<sup>1-5</sup> We believe this is the first report of a Hem-o-lok clip serving as the nidus for stone formation after LRP.

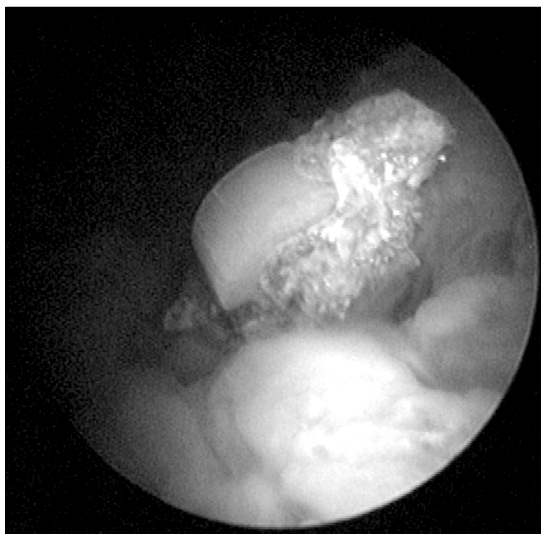
## CASE REPORT

A 65-year-old man presented with a 3-month history of perineal pain, dysuria, and intermittent macroscopic hematuria. He had undergone LRP for localized prostate cancer in November 2003 (pathological stage, T2b N0 M0; Gleason 3+3=6). Physical examination was normal. Urinalysis revealed microscopic hematuria. Serum prostate-specific antigen (PSA) levels decreased and remained under the detection level (0.04 ng/ml). Plain abdominal radiograph revealed a 15x10 mm opacity at the level of the pubic symphysis, consistent with a bladder stone (Fig. 1). Cystoscopy showed that the clip was protruding at the left side of the urethrovesical junction with a stone adhering to it. Part of the stone broke off during cystoscopy (Fig. 2). Review of the operative record of the LRP revealed that the Hem-o-lok clip (Weck Closure System, Research Triangle Park, USA) had been used for urethrovesical anastomosis. The detailed description of the surgical technique of

urethrovesical anastomosis was as follows: 16 to 18 cm of two 3-0 Polyglyconate sutures were tied together at their tail ends. First, the left suture was placed at the 5-o'clock position on the bladder side outside-in and then through the urethra at the same location inside-out, and two running stitches were made in the clockwise direction. At the 8-o'clock position of the outside of the urethra, tension was maintained on the stitch as a single 10 mm Hem-o-lok clip was placed, then stitches were



**Fig. 1.** Plain x-ray showing a 15x10 mm calcific density around the pubic symphysis.



**Fig. 2.** Cystoscopic image of the stone formed on the Hem-o-lok clip.

run from the 8-o'clock to the 12-o'clock position. The right suture was placed at the 4-o'clock position, and running stitches were made in a counterclockwise direction. At the 12-o'clock position, the ends of the running sutures were tied together with an intracorporeal knot.

For stone removal, a 20.8 Fr nephroscope was passed through the urethra and the stone was fragmented with an ultrasonic lithotripter. Then, all stone fragments and the embedded Hem-o-lok clip were removed by use of a two-pronged grasper. An 18 Fr urethral catheter was placed for 12 hours after the procedure. The postoperative period was uneventful and the patient was discharged on the first postoperative day. At one month after surgery, the results of urinalysis were normal and the patient had no complaints. Stone analysis revealed a calcium stone.

## DISCUSSION

Urethrovesical anastomosis during LRP is a critical technical point of this operation, requiring significant training and experience and a relatively long operative time. Close, watertight approximation of the tissue during this step is the key in the prevention of urinary leaks. During our initial learning curve, we experienced several episodes of tension release from the suture, which could result in a potential "gap" and lead to anastomotic leakage. In general, the Hem-o-lok clip permits the surgeon to apply additional suture tension if needed. The Hem-

o-lok clip is a nonabsorbable polymer clip and thus is meant to be a permanent remnant of surgery. There are several reported cases of foreign bodies at the urethrovesical anastomosis leading to perineal pain, urinary frequency, and calculus formation.<sup>1-5</sup> Gonzalgo et al<sup>1</sup> described the results in 250 cases of LRP and observed erosion of nonabsorbable Hem-o-lok clips into the bladder neck in 2 patients. These patients presented with urinary urgency, irritative voiding symptoms, and microscopic hematuria.

In our patient, the overlying stone was removed easily. The clip was more difficult to remove because it was slightly embedded in scar tissue. To our knowledge, this is the first report of a bladder stone forming on a Hem-o-lok clip. We presume that the cause of stone formation was urethral erosion of the nonabsorbable clip. Concerns for clip erosion on the urethra may be avoided if the clip is applied outside the thicker tissue of the bladder neck. This maneuver would result in clip placement located away from the urethrovesical junction, but it should always be kept in mind that there is the possibility of the clip migrating into the urethral lumen, especially when the clip is loosely applied.

To reduce the risk of stone formation after LRP, we suggest using an intracorporeal knot tying technique during the urethrovesical anastomosis. If one chooses to use a surgical clip to prevent potential loosening of the thread, it is preferable to use absorbable clips (such as Lapra-ty).

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