

# Stone Formation on the Migrated Hem-o-Lok Clip after Laparoscopic Pyelolithotomy

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## ABSTRACT

Although there are advantages of using Hem-o-lok clips in laparoscopic surgery, sometimes they can be the cause of the complication itself. Migration of Hem-o-Lok clips into the collecting system is a rare but a troublesome complication. We present a case of ureteropelvic junction (UP-J) migration of a Hem-o-lok clip after laparoscopic pyelolithotomy. In this case, the clip acts as a nidus for subsequent stone formation leading to a misdiagnosis as an UP-J obstructing stone. Finally it was managed with a rigid ureterorenoscopic approach. We concluded that, unless necessary, the use of Hem-o-lock clips should be avoided around the collecting system. In used cases we should be sure to place the clip a bit far away from the violated collecting system area in a tension free fashion.

**Key words:** Stone, laparoscopy, clip, migration, surgery

## Laparoskopik Pyelolitotomi sonrası Göç Eden Hem-o-Lok Klibinde Taş Oluşumu

### ÖZET

Laparoskopik cerrahide Hem-o-lok klipler kullanmanın avantajları olmasına rağmen, bazen komplikasyonlara neden olabilir. Toplayıcı sistem içine Hem-o-Lok kliplerinin göç etmesi nadir kötü bir komplikasyondur. Biz laparoskopik piyelolitotomi sonrası Hem-o-lok klibin üreteropelvik bileşkeye (UP-J) göç olgusunu sunuyoruz. Bu olguda, klip UP-J'yi tıkayan bir taş gibi yanlış tanıya neden olan daha sonra taş oluşumuna neden olabilecek bir engel olarak hareket eder. Bu olgu üreterorenoskopik yaklaşımla tedavi edildi. Biz gerekli olmadıkça Hem-o-lock kliplerinin toplayıcı sistemin etrafında kullanımından kaçınılmalıdır. Kullanılmış durumlarda biz bozulmuş toplama sisteminden uzak bir yerde klibin yerleştiğinden emin olmak gerekmektedir.

**Anahtar kelimeler:** taş, laparoskopisi, klip, göç, cerrahi

## INTRODUCTION

Last decade showed an increase in the use of laparoscopic procedures in many surgical field. During these procedures many instruments are used to ease or shorten the duration of operation. Despite their advantages, sometimes they can be the problem itself. Migration of surgical materials into the urinary tract, a rare but troublesome condition, is one of those (1, 2).

Hem-o-lok clip is one of the instruments commonly used either in vascular control or maintaining the stability of the sutures. We present a case of spontaneous migration of hem-o-lok clip into the renal pelvis and acting as a nidus for stone formation 2 years after the initial laparoscopic pyelolithotomy operation.

## CASE

A 42-year-old woman who admitted with a complaint of renal colic was found to have a history of ipsilateral laparoscopic pyelolithotomy two years ago. Her medical record was analyzed and confirmed that, at the end of the operation, no residual stone fragment was left behind. The violation of renal pelvis had been repaired using a running 4-0 Vicryl and the stabilization of the suture had been made by a nonabsorbable surgical clip (Hem-o-Lok clip).

Intravenous urography (IVU) demonstrated an opacity of 10 mm in right ureteropelvic junction (Figure 1). The opacity was considered as a newly formed stone. Regarding to her stone formation history and accompa-

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**Figure 1.** Plain radiography of IVU showing the opacity projected on the right kidney collecting system.

nying hydronephrosis shown in the IVU (Figure 2), rapid ureterorenoscopic management was planned. With a 9F rigid ureteroscope, through the right ureteral orifice, the stone was visualized. Via the working channel of ureteroscope, with a 365 micron laser probe, lithotripsy was performed. After some fragmentation, Hem-o-lok



**Figure 2.** Clip with Stone formation obstructing the ureteropelvic junction and causing hydronephrosis



**Figure 3.** After the hem-o-lok clip removed out of the collecting system, with some Stone fragments

clip, the nidus of the stone was then appeared. With a grasper, the clip was then removed out of the collecting system (Figure 3). The morning after the procedure she was discharged from the hospital.

## DISCUSSION

With the increase in the laparoscopic procedures, alternative techniques either for hemostasis or for knotting, has also been increased (2). Stabilising the suture with hem-o-lok clip instead of knotting is one of those techniques. Although it is a time saving method, sometimes as in this case, it may be the problem itself. Reports related with general surgical practice mention about the migration of clips into the common bile duct and subsequent stone formation after laparoscopic cholecystectomies (3). Migration of a surgical clip into the collecting system is a very rare complication. Nevertheless, there are some reports recently addressing the migration of absorbable, non-absorbable or metal clips into the collecting system after laparoscopic or open partial nephrectomies, respectively (4). Also, there are several reports about migration of the Hem-o-lok clip after radical prostatectomy into the rectum and urinary bladder, with subsequent bladder stone formation (4, 5). The fact that surgical clips may act as a nidus for stone formation when they are in contact with urine has also been reported (1).

The report we are presenting is an unexpectedly rare and unique case of a hem-o-lok clip, first eroding the

collecting system and then obstructing the urine flow by the subsequent stone formation on it at the ureteropelvic junction. This is also why it was misdiagnosed as an ureteral stone. Based on our experience and the literature, we conclude that, whether if it is absorbable or non-absorbable, all types of surgical clips may erode into the collecting system and may lead to consequences like preventing urine flow or acting as a nidus for stone formation. Therefore, while dealing with the collecting system, unless mandatory, knotting should be preferred instead of clip stabilising. Otherwise, attention must be paid when placing the clip in order to avoid the pressure on the violated site to prevent erosion into the collecting system. Nevertheless, one must be aware of the potential complication risks and carefully examine the patient during follow-up when it is done so.

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