

Spontaneous massive stone street: A rare case report

Spontan masif taş yolu: Nadir bir vaka raporu

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Özet

Taş yolu genellikle şok dalga litotripsinin bir komplikasyonu olarak bilinir ve üreterde obstrüksiyona sebep olan taş parçalarının birikmesi sonucu oluşur. Biz de herhangi bir predispozan faktörü ve şok dalga litotripsisi öyküsü olmayan 43 yaşındaki erkek hastada görülen spontan masif taş yolu gelişen vakamızı sunmayı amaçladık.

Anahtar Kelimeler: Üreter taşı, Taş yolu, Şok dalga litotripsi

Abstract

Stone street is generally known as a complication of shock wave lithotripsy and formed by retention of stone pieces obstructing ureter. In this case report, we aimed to present a 43-year-old male patient with spontaneous massive stone street formation without history of any predisposing factor or shock wave lithotripsy.

Key Words: Ureter stone, Stone Street, Shock wave lithotripsy

Introduction

Stone street is the cumulation of stone fragments causing obstruction of ureter mostly seen after shock wave lithotripsy (SWL) treatment. Course of this formation is usually temporary and asymptomatic. In 1/3 of cases, stone street formation may emerge as silent obstruction leading loss of renal function (1). According to our knowledge, there is no report of massive spontaneous stone street formation in literature without any predisposing factor or treatment applied for stone. We aimed to present the case and the treatment of a 43-years-old male patient in our clinic with unusual spontaneous massive stone street formation despite no history of any predisposing factor.

Case report

A 43-year-old male patient complaining right flank pain and hematuria approximately through one week applied our clinic. The patient had no property in self and family history. Microscopic hematuria was observed in urinalysis of patient and urine culture was sterile. Serum creatinine was 1.3 mg/dl in biochemistry blood tests. Bilateral renal stones and stone street lying down from upper part to urinary bladder inlet of the right ureter were shown in direct urinary system radiography (DUSG) (Figure 1). Non-contrast abdominal computed tomography also indicated bilateral renal stones and stone street lying down from upper part to urinary bladder inlet of the right ureter. Dimercaptosuccinic acid scintigraphy

(DMSA) indicated wide scar area in the right kidney and identified function of the right kidney contributed 14% of the normal total right kidney function. Right ureteroscopy was performed by using holmium laser lithotripsy. Double J stents were placed bilaterally following ureteral stone extraction with forceps (Figure 2). Then, in different session right renal stones underwent percutaneous nephrolithotomy. Percutaneous nephrolithotomy had also planned for patients left renal stones.

Discussion

Stone street is the deposition of stone fragments or pebble stones in ureter causing retention of urine passage through obstructed way which does not allow to pass urine in a reasonable time (2). Stone street is known as the complication of SWL treatment applied to large renal stones (1). Stone street develop in 4-7% of patients applied SWL.

Stone street may lead to symptoms such as the flank pain, fever, nausea and vomiting, urinary bladder irritation or may be asymptomatic. The main problem due to the stone street formation is urinary obstruction which can be silently result with renal disfunction in 23% of cases. Anuria may be seen in stone street formation in 5% of patients having solitary kidney (2). Our patient has been probably a quiet lying stone street case diagnosed by the help of the right flank pain and hematuria symptoms continuing for last one week period. Function loss in the affected kidney is seen in scintigraphy.

In the literature, reported cases of the stone street are formed mostly after SWL application to renal stones or due to a predisposing factor. Van Savage et al. reported spontaneous bilateral stone street case associated with renal tubular acidosis (3). Abdulmajed M I et al. reported a 34-year-old male patient the massive stone street at the lower end of the ureter without any causative lithotripsy (4). There was no history of urinary tract stones, urinary tract anomalies or SWL application in our case. Unlike the cases reported in the literature, there was massive spontaneous stone street formation extending from lower point of ureter to the ureteropelvic junction in our case.

There is no standard treatment protocol for stone street. The choice of treatment modality depends on renal function, infection and degree of obstruction. Repetitive SWL, percutaneous nephrostomy, endoscopic stone tre-



Figure 1. View of stone street in the right ureter

atment and eventually open surgical treatment methods can be used in the presence of failure in stone fragments passage, pain, infection and obstruction (5-7).

Conservative treatment is the first treatment choice if the patient with stone street is asymptomatic and willing to remain under close follow-up. Another treatment option is the expulsive medical treatment reducing the need for surgical interventions and enhancing stone passage (8). Percutaneous nephrostomy placement is one of the treatment options in symptomatic infected or uninfected urinary tract obstruction cases (6). Ureteroscopy has equal efficacy with SWL in stone street treatment (9). In our case urinary obstruction was seen with concomitant renal colic without infection and we performed ureteroscopy accompanied by holmium laser lithotripsy, stone street has been completely cleared by the help of stone forceps. No complication was observed after procedure.

As a result, stone street formation sometimes may be a troublesome situation and may even result with loss of kidney function. Even though stone street is more likely



Figure 2. Appearance after cleaning of stone street

to be occur after SWL treatment, we should keep in mind that massive stone street formation may be seen spontaneously without any stone treatment history or predisposing factor.

References

1. Madbouly K, Sheir KZ, Elsobky E, et al. Risk factor for the formation of a steinstrasse after extracorporeal shock wave lithotripsy: A statistical model. *J Urol* 2002;167:1239-42.
2. Turk C, Knoll T, Petrik A et al. Guidelines on urolithiasis. *Eur Assoc Urol* 2013; 1-100.
3. Van Savage JG, Fried FA. Bilateral spontaneous steinstrasse and nephrocalcinosis associated with distal renal tubular acidosis. *J Urol*. 1993;150:467-8.
4. Abdulmajed M I, Anandaram P S, Jones V W, et al. Massive steinstrasse without lithotripsy: a rare case report. *Turkish Journal of Urology* 2013; 39: 61-3.
5. Coptcoat MJ, Webb DR, Kellet MJ, et al. The steinstrasse: A legacy of extracorporeal lithotripsy? *Eur Urol* 1988;14:93-5.
6. Sayed MA, El-Taher AM, Aboul-Ella HA, et al. Steinstrasse after extracorporeal shockwave lithotripsy: aetiology, prevention and management. *BJU Int* 2001;88:675-8.
7. Goyal R, Dubey D, Khurana N, et al. Does the type of steinstrasse predict the outcome of expectant therapy? *Indian J Urol* 2006;22:135-8.
8. Moursy E, Gamal WM, Abuzeid A. Tamsulosin as an expulsive therapy for steinstrasse after extracorporeal shock wave lithotripsy: a randomized controlled study. *Scand J Urol Nephrol* 2010;44:315-9.
9. Rabbani SM. Treatment of steinstrasse by transureteral lithotripsy. *Urol J* 2008;5:89-93.