

Achilles tendon rupture due to distal ureteral stone

Distal üreter taşına bağlı aşil tendon rüptürü

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Abstract

Ureteral stones form the important part of the daily urological practice. Small ureteral stones show tendency to pass with conservative treatments. Such methods as increasing the fluid intake and plyometric exercises are the examples of conservative measures. Herein, we present a case with an achilles tendon rupture due to the plyometric exercises in order to pass 4mm distal ureteral stone.

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Key words: Achilles tendon, plyometric exercise, ureteral stone

Özet

Üreter taşları güncel üroloji pratiğinin önemli bir kısmını oluşturmaktadır. Küçük üreter taşları konservatif tedavi ile kendiliğinden düşme eğilimindedir. Hidrasyonun artırılması, pleometrik egzersizler gibi yöntemler konservatif yöntemler arasında sayılabilir. Biz burada 4mm boyutundaki distal üreter taşını düşürmek için pleometrik egzersize bağlı aşil tendonunda rüptür gelişimini sunduk.

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Anahtar sözcükler: Aşil tendonu, pleometrik egzersiz, üreter taşı

Introduction

Ureteral stones form the 20% part of whole urinary system stones, and 70% of these are located in distal ureter [1]. While some of the ureter stones may pass spontaneously with conservative follow-up, some of them may cause urinary tract infection, hydronephrosis and deterioration in renal functions [2]. The patients are recommended by the most of the urologists to increase their fluid intake and jump together with medical expulsive therapies in order to facilitate the expulsion of the stones from ureter. We report a case who had achilles tendon rupture in his right ankle after hard sportive activities requiring explosive power like playing basketball everyday long-term and running, in order to pass his 4 mm distal ureter stone.

Case Report

A 4 mm radio-opacity was seen at the left side of the bone pelvis on KUB graphy of a 39 year old male patient who applied to the urology outpatient clinic with the complaint of left lumbar pain (Figure 1). Urinary system ultrasonography revealed minimal hydronephrosis on the left kidney and a 4 mm hyperechogenity which was compatible with a stone in the left distal ureter.

Conservative treatment was planned for the patient and tamsulosin 0.4 mg capsule once a day was applied as medical expulsive therapy and the patient was adviced to increase his daily fluid intake and to do exercise in order to facilitate the expulsion of the stone. Two weeks after the initiation of the treatment, he was referred to the emergency service with the complaint of severe right ankle pain. The patient

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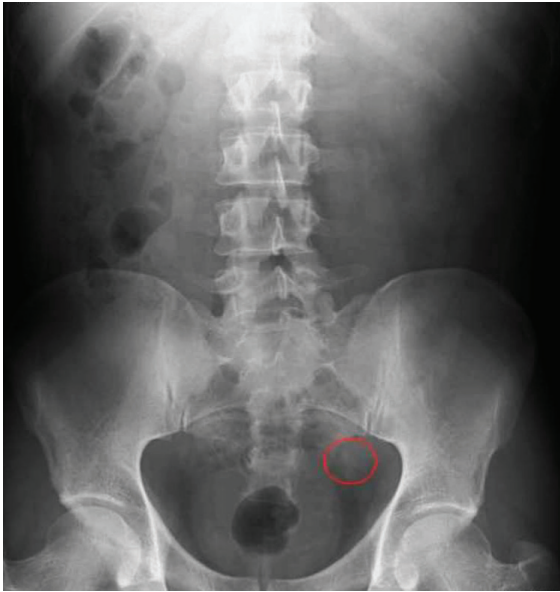


Figure 1. 4 mm radio-opacity on the direct urinary system graphy of the patient.

was evaluated by orthopedic surgeons at the emergency department. The patient could not be able to make plantar flexion at right ankle joint. Discontinuity of achilles tendon about 4 cm proximal to the calcaneal insertion, gap sign and positive Thompson test were revealed as the findings of achilles tendon rupture (Figure 2A). Tendon was repaired with modified Kessler suture, and after the closure of the wound circular long-leg casting was applied to the affected extremity while the ankle was at 20 degrees plantar flexion (Figure 2B).

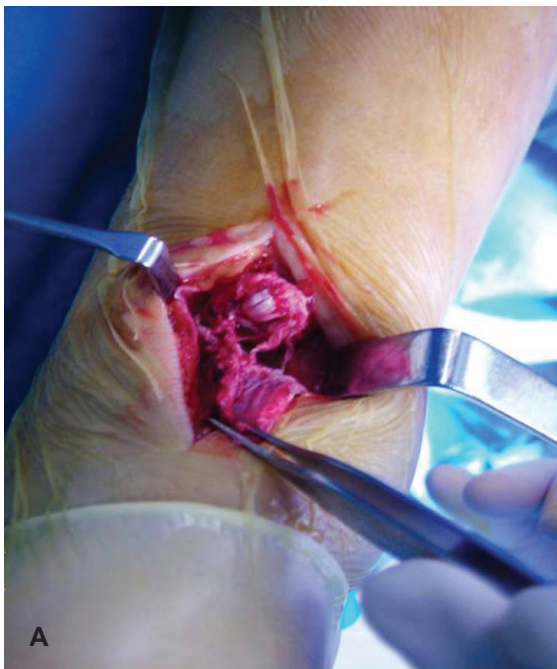


Figure 2. Ruptured right achilles tendon of the patient (A) and its repair (B).

Discussion

The treatment modalities in ureteral stones consist of observation (hydration and pain control), medical expulsive therapy (MET), extracorporeal shock wave lithotripsy (ESWL), percutaneous antegrade ureteroscopy, antegrade ureteroscopy and open/laparoscopic ureterolithotomy. It was reported in a meta-analysis that the ratio of spontaneous passage of stones smaller than 5 mm and stones with a diameter of 5-10 mm were 68% and 48%, respectively [3]. Mid and distal ureter stones had higher spontaneous expulsion ratio compared with proximal located ones, regardless from the size. Spontaneous passage rates were reported as 22%, 46% and 77% for proximal, mid and distal located stones respectively [4]. Increasing the fluid intake, spa-sauna therapies and plyometric exercises may be advised for the patients together with medical expulsive therapies.

Plyometric training is an intense, advanced form of exercise in which the muscles are first stretched, then contracted (the pre-stretching makes the muscle contract with greater force). Plyometric movements are powerful and high-impact, although the impact should be controlled as much as possible. Plyometric training requires both strength and endurance. Common plyometric training exercises include various jumps and hops, sometimes using obstacles such as steps or cones. These exercises may help to pass the stone by the effect of gravity. The improper plyometric exercises cause sportive injuries such as achilles tendon rupture, meniscus tear or injuries at the vertebral column. While doing plyometric training, the shoes and the ground should be suitable for these exercises and the trainer should perform warm-up exercises before jumping.

Achilles is the thickest tendon of the human body and is formed with the connection of the tendinous parts of gastrocnemius and soleus muscles. Achilles tendon ruptures occur during the sportive activities in the ratio of 44-83% and these are seen more commonly in males [5-7]. Achilles tendon rupture is typically seen in third and fourth decades in men who work in the offices and who rarely do exercises [8].

We also observed right achilles tendon rupture in a 39 year old male patient with 4 mm left distal ureter stone after hard sportive activity requiring explosive power for spontaneous expulsion of the stone.

In conclusion, while suggesting conservative therapies, avoiding from plyometric exercises must be advised for the patients who are suffering from ureter stones and who have sedentary life and rarely do sportive activities.

Conflict of interest: The authors declared no conflict of interest.

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