

Urinary Colic During Low-Back Treatment: Out of the Frying Pan into the Fire?

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ABSTRACT

Objective. The objective of this study was to present a possible discrete effect of heat therapy on the urinary system during physical therapy of a patient with lumbar discopathy.

Design. This is a case report.

Setting. This study was carried out in a tertiary care university hospital.

Patients and Interventions. A 33-year-old man with the diagnosis of lumbar discopathy undertook physical therapy including heat. On the third day of treatment, he had suffered colic low-back (flank) pain with quite a different nature from his initial painful complaints. In addition to conservative management of the renal stone, we continued heat therapy.

Outcome Measures and Results. After 10 days of physical therapy, he was found to have improved both with regard to his low-back and urinary complaints.

Conclusions. The physicians should be aware of the effects of heat therapy on the urinary system when treating patients with musculoskeletal pathologies of the lumbar region.

Key Words. Low-Back Pain; Urinary Colic; Heat Therapy; Renal Stone

Introduction

Kidney or ureteral stones may cause pain in the low back or radiating down to the groin [1]. The management is either conservative or surgical, depending on the size, location, and composition of the stone, and presence of any anatomical malformation or complications [2]. Although heat therapy has been used to reduce pain originating from musculoskeletal pathologies since ancient times, there is only one study reporting on the effective treatment of renal colic by warming the low back. However, to our best notice, there is no report in the hitherto literature that mentions about the triggering effect of heat treatment with regard to the initiation of renal colic due to a ureteral stone. Accordingly, we have presented a

patient with lumbar discopathy who had a discrete acute flank pain during physical therapy including heat (superficial and deep) treatment.

Case Report

A 33-year-old man was seen for his complaint of low-back pain for the last 2 months. He declared that the pain was worse on standing, during weight lifting, and also after walking, but that it disappeared during rest. He added that, occasionally, it was also accompanied by lateral leg pain on the left side. He denied having any colic pain, dysuria, or hematuria. His medical history was otherwise noncontributory; he had not been taking any medication.

In his physical examination, low-back movements were found to be painful during flexion and left lateral bending. Paravertebral muscle spasm was present on the right side. Straight leg raising test and the rest of the neurological examination

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pertaining to the lower extremities were completely normal. Costovertebral angle tenderness was absent. Radiographs of the low back were unremarkable. Magnetic resonance imaging of the lumbar vertebrae revealed protruded disk at the level of L4-L5 occluding partially the left foramen (Figure 1). Thereafter, he was started on a physical therapy program that comprised hot pack, ultrasound, and isometric-strengthening exercises for the low back. On the third day of physical therapy, he suddenly started to suffer from an acute loin to groin colicky pain on the right side. He also complained of dysuria and pollakiuria. Computerized tomography evaluation in the emergency room was consistent with a 3-mm stone in the right ureter (Figure 2). After 10 days of physical therapy and a conservative treatment for urolithiasis, he was found to have improved both with regard to his low-back and urinary complaints.

Discussion

The nature of the low-back pain is quite suggestive for the physician to unmask the underlying pathology. In lumbar disc herniation, the pain is usually dull, and in case of a concomitant spinal nerve compression, it may radiate downward to the leg. While activities such as walking or working in standing position for a long time increase the symptoms, the patients usually describe relief with rest. However, urinary tract stones generally result in severe, acute colicky low-back (flank) pain radiating to the groin. During these complaints, patients are restless and often writhing in distress, and pain does not subside with rest.

Pyeloureteral motility and ureteral pain are regulated by myogenic and neurogenic factors. Cholinergic (parasympathetic) and noradrenergic (sympathetic) nerves have been demonstrated in the mammalian pyeloureter. In the experimental studies, it was found that while acetylcholine increases the contractile activity of the ureter, norepinephrine results in either stimulation or inhibition of the urinary tract contractility [3]. It was stated that heat therapy has a suppressive effect on the sympathetic hyperactivity, which is seen during acute colic pain with renal origin [4]. Likewise, we speculate that in our case, the heat therapy (superficial or deep) might have resulted in a decrease in the sympathetic stimuli to the urinary tract and have caused changes in its contractile activity—subsequently moving the renal pelvic stone into the ureter. Hence, the patient during the treatment for lumbar discopathy had a discrete



(A)



(B)

Figure 1 (A) Saggital and (B) transverse magnetic resonance imaging of the lumbar vertebrae demonstrating the L4-L5 protruded disk occluding partially the left foramen.

acute pain on the opposite side of his low back. However, renal colic pain can be treated effectively with warming the low back [4]. Therefore, we continued hot pack and ultrasound treatment after the diagnosis of ureteral stone in our case.

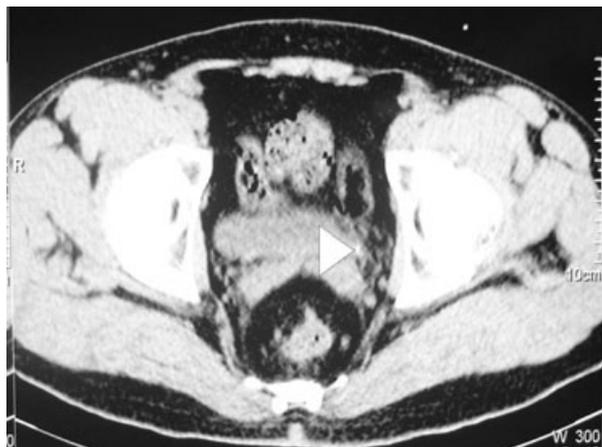


Figure 2 Computed tomography of the abdomen illustrating 3-mm dense right ureteral stone (white arrowhead).

In closing, we believe that physicians should diligently follow their patients pain during physical therapy and that they should always be vigilant against a change in its nature. Last but

not least, the impact of heat therapy on the urinary system should also be kept in mind when treating patients for musculoskeletal pathologies of the lumbar region, as this would be noteworthy in uncovering a renal stone that has never been diagnosed hitherto.

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