

## Acute testicular pain revealing nephretic lithiasic colic: A case report with literature review

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World Journal of Advanced Research and Reviews, 2024, 21(02), 866–869

Publication history: Received on 30 December 2023; revised on 07 February 2024; accepted on 10 February 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.2.0482>

### Abstract

Acute testicular pain is a common issue in urology. While spermatic cord torsion and orchiepididymitis are typical causes, renal colic is a rare clinical entity that can manifest as acute testicular pain. In this case report, we present the case of a young patient who experienced acute right testicular pain without radiation, accompanied by microscopic hematuria. An abdominopelvic CT scan revealed a stone in the right lumbar ureter with upstream dilation. Emergency treatment consisted of diverting urine using a JJ catheter and performing flexible ureteroscopy with remote stone extraction. This observation highlights that not all cases of acute testicular pain are due to torsion of the spermatic cord. In this report, we will review the relevant literature.

**Keywords:** Colic; Lithiasis; Cord; Pain.

### 1. Introduction

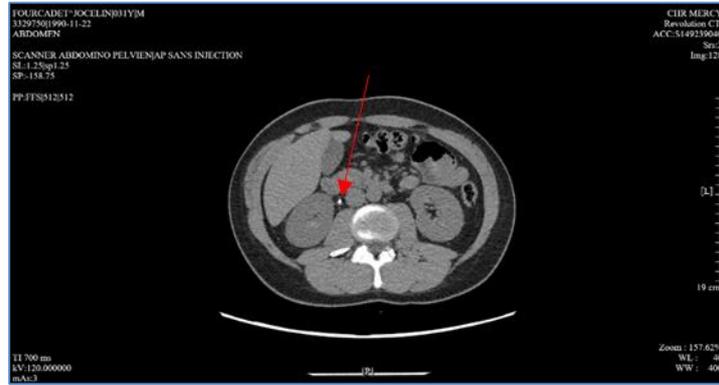
Acute testicular pain is a frequent reason for consultation in urological emergencies (1). Diagnosis and management can be challenging as they may affect the functional prognosis of the testicle. Therefore, appropriate and prompt support is crucial (2). In adults, the most commonly found etiologies are testicular torsion and acute orchiepididymitis (3). Unless proven otherwise, acute testicular pain is considered a torsion of the spermatic cord, and surgical treatment is necessary for testicular torsion (4). However, in rare cases, testicular pain may indicate a non-testicular pathology. This is known as referred pain, which is felt at a distance from the causal lesion (5,6).

The purpose of this observation is to demonstrate that not all cases of acute testicular pain are caused by torsion of the spermatic cord. It is important to remind clinicians that a thorough questioning and clinical examination can eliminate the possibility of missing a torsion of the spermatic cord, and therefore prevent unnecessary exploratory scrototomies.

### 2. Case presentation

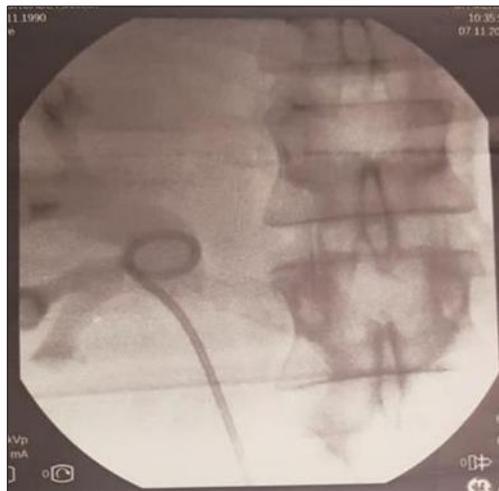
A 34-year-old patient with a history of undocumented right renal colic presented to the emergency room with sudden onset of right testicular pain, nausea, and no vomiting or associated urinary signs. Examination of the external genitalia revealed a non-inflammatory scrotum and a painful, non-ascended right testicle. There were no torsions or varicosities on palpation of the testicle or scrotum. The hernia orifices were unobstructed. Renal function was normal, and there was no biological inflammatory syndrome. White blood cells were at 10,000/mm<sup>3</sup>, and C-reactive protein was at 5 mg/L. The urine test strip showed microscopic hematuria with leukocyturia but without nitrites. The non-enhanced low-dose abdominopelvic CT scan revealed a 5mm stone in the right lumbar ureter with a calcium density of 1100UH (Fig. 1).

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**Figure 1** An axial section of an abdominal-pelvic scan, indicating the lumbar ureter measurement of 5 mm (indicated by the arrow).

The patient initially benefited from urine diversion by raising the double j catheter (Fig. 2). After 6 weeks, a flexible ureteroscopy was performed to extract the stone.



**Figure 2** An X-ray of the right kidney taken immediately after the operation with the JJ probe in place, demonstrating the upper loop in the correct position.

### 3. Discussion

Acute testicular pain is a common reason for seeking emergency medical attention. The diagnosis of spermatic cord torsion should be considered as the primary cause until ruled out (4). In some cases, after a thorough interview, clinical examination, and imaging, testicular torsion can be ruled out in favor of another non-testicular pathology (6).

The patient presented to the emergency room with acute right testicular pain and a testicle that appeared to be neither ascended nor horizontalized. He reported no urination problems and denied any risky sexual behavior. An ultrasound of the scrotal contents, which is indicated in such circumstances, was not performed due to the unavailability of an ultrasound doctor at night. The patient reported that he had experienced right lower back pain 6 months ago, which was relieved after taking analgesics. Additionally, the presence of microscopic hematuria and the history of right renal colic led us to consider the possibility of a kidney stone migrating into the ureter. This case highlights the importance of a thorough interview and clinical examination. When presented with this clinical scenario, a non-invasive abdominopelvic CT scan with a low radiation protocol is the preferred method for detecting urinary tract stones, particularly ureteral stones, over the ASP-ultrasound combination. The CT scan confirmed the diagnosis of renal colic resulting from a stone migrating into the lumbar ureter (7).

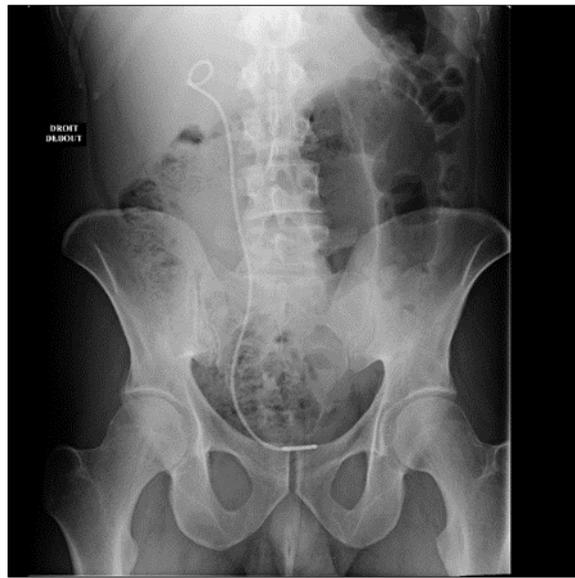
Numerous testicular explorations are performed worldwide every day to diagnose suspected spermatic cord torsion. However, a retrospective study conducted by TORSAFUF in 14 French university hospital centers on 2940 patients aged

12 and over revealed that torsion of the spermatic cord was confirmed in only about 60% of cases, resulting in almost 40% of unnecessary surgical procedures (8).

Pain in the testicular area can also be caused by renal, digestive, or spinal issues (9). Renal colic is the most common non-scrotal condition that can present with isolated acute scrotal syndrome (9). However, the topography of pain is not always a reliable indicator of the affected organ or region (10, 11, 12). Any organ that shares the same innervation as the scrotal contents can cause referred epididymo-testicular pain, and testicular pain without local abnormality is often referred pain (9). The pain in question may be due to the ureter coming into contact with the genito-femoral nerve at the L4 level (13, 14).

An abdominopelvic CT scan without contrast injection was performed on our patient, which is more sensitive than ultrasound in detecting urinary tract stones, particularly ureteral stones (7, 14,15).

Our patient underwent emergency placement of a double J catheter. A simple urinary tract x-ray taken after 4 weeks showed the persistence of the stone, which had flushed into the right kidney (Fig. 3). After 6 weeks, the patient underwent flexible ureteroscopy with stone extraction. The postoperative course was uneventful. The patient will have a follow-up urology consultation in 4-6 weeks to discuss the results of the morpho-constitutional analysis of the urinary stone, which will be examined using infrared spectrophotometry. A simple metabolic assessment should be carried out in 4 to 6 weeks, and annual follow-ups are recommended to detect any recurrence of stones (7).



**Figure 3** A simple urinary tract radiograph (AUSP) with the JJ catheter on the right in place. The flushed stone in the right kidney is barely visible due to the poor quality of the radiographic examination.

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#### 4. Conclusion

Isolated acute testicular pain is a rare cause of renal colic and can be misinterpreted as torsion of the spermatic cord. Pain in the testicular area can have various origins. A thorough interview, physical examination, and diagnostic testing, including imaging, are essential for accurate diagnosis and proper patient care.

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#### Compliance with ethical standards

##### *Acknowledgments*

Acknowledgments for the staff of the department of Urology, Hassan II University Hospital, Fez, Morocco.

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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