

Case Study of Testicular Torsion: Therapeutic and Legal Considerations

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Case Report on Testicular Torsion

An 18-year-old male presented to the emergency department with flank pain that had commenced earlier that morning. The pain was localized and non-radiating, accompanied by nausea and vomiting. The patient denied experiencing fever but reported the presence of hematuria. Notably, he had not had a bowel movement since the onset of pain and indicated a family history of nephrolithiasis, specifically in his father. Upon examination, the patient's vital signs were stable, with a blood pressure of 110/80 mmHg, a pulse rate of 86 bpm, and oxygen saturation (SpO₂) at 96% on room air. The abdominal examination revealed no tenderness, distension, rigidity, or guarding; however, tenderness was noted in the right paraspinal region. An abdominal ultrasound demonstrated inflammatory changes, including a slight increase in the echogenicity of the fat in the right lower quadrant (RLQ), alongside an appendix loop measuring 6 mm in diameter, consistent with the clinical and laboratory findings. The patient subsequently underwent an appendectomy on the same day, with a diagnosis of acute appendicitis. Postoperatively, nursing reports indicated a recorded temperature of 37.6°C several hours after the procedure, which subsequently normalized following sponge bathing. The patient was discharged in stable condition, free from pain and fever. However, three days post-discharge, the patient returned with symptoms of pain,

swelling, and erythema of the right testicle. An ultrasound examination revealed a heterogeneous right epididymis with absent blood flow; the testicle appeared swollen and heterogeneous, exhibiting multiple hypoechoic areas and no detectable vascular flow. Additionally, the distal portion of the spermatic cord demonstrated severe heterogeneity and a twisted appearance, indicative of right testicular torsion. The patient underwent emergency surgical intervention, during which left orchiectomy and orchidopexy were performed. Following a period of relative improvement, the patient's family filed a complaint alleging negligence on the part of the medical team regarding the initial diagnosis and treatment. In response, the surgical team maintained that during the initial admission, there were no clinical signs indicative of testicular torsion, and that the presentation of appendicitis was sufficiently acute to warrant surgical intervention.

Discussion

Testicular torsion (TT) represents a critical urological emergency characterized by the twisting of the testicle around the spermatic cord. This condition compromises blood flow to the affected testicle, which, if left untreated, can lead to ischemia and subsequent necrosis.¹⁻² The time frame for preserving testicular viability is limited,

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typically ranging from 4 to 8 hours following the onset of torsion. Thus, prompt diagnosis and timely surgical intervention are essential to protect both testicular integrity and male fertility. Delays in diagnosis and treatment can result in testicular loss in 31 to 42 percent of cases, highlighting the necessity for swift clinical action. Furthermore, deficiencies in the diagnostic and treatment processes not only pose significant clinical challenges but also expose healthcare providers to potential legal repercussions.³ Although testicular torsion is a relatively uncommon condition, it is associated with a high incidence of medical malpractice claims, with misdiagnosis identified as the primary factor in approximately 70 percent of these cases.⁴ Key diagnostic indicators include patient age, sudden onset of unilateral testicular pain occurring within 24 hours, and the presence of one or more additional symptoms: nausea, vomiting, testicular swelling, erythema, tenderness, an elevated position of the testicle (referred to as the Brunzel Sign), and wrinkling of the scrotal skin (known as Ger's Sign). In some cases, pain may persist beyond 24 hours or present intermittently. Pain, swelling, and tenderness in the testicular region are commonly reported as primary findings.² Clinical decision-making is informed by the Testicular Workup for Ischemia and Suspected Torsion (TWIST) scoring system, which comprises five criteria based on the patient's history and clinical examination. The scoring criteria are as follows: testicular swelling (2 points), testicular hardness (2 points), absence of the cremasteric reflex (1 point), presence of nausea/vomiting (1 point), and an elevated testicle (1 point). A total score of 0-2 indicates a 100% likelihood of no torsion, while scores of 3-4 suggest moderate risk, warranting further evaluation through ultrasound and consultation with urology. A score of 5 or higher denotes high risk, confirming the necessity for immediate surgical intervention without the requirement for ultrasound, and mandates urgent referral to the urology service for prompt treatment. In conclusion, the timely recognition and management of testicular torsion are crucial to minimizing complications and ensuring optimal outcomes for affected patients. Given the significant diagnostic utility of the TWIST Score, its application in emergency departments and by non-urology specialists is strongly recommended.² While the primary differential diagnoses for

testicular torsion (TT) include testicular appendage torsion and epididymo-orchitis, it is also imperative to consider other conditions such as incarcerated hernia, pancreatic tumor, hemoperitoneum, urinary tract infection, hydrocele, renal colic, gastroenteritis, Henoch-Schönlein purpura (HSP), and acute appendicitis.^{1,3} Effective management of these potential conditions is heavily reliant on a thorough clinical evaluation conducted during the triage phase. This evaluation should encompass comprehensive history-taking, appropriate physical examination, paraclinical investigations, and specialized consultations within the emergency department.⁵

Key Recommendations

- **Comprehensive Assessment:** Initial observations, patient history, and clinical examinations are paramount. When a patient presents with pain, it is crucial for the examining physician to meticulously document the characteristics of the pain, including its intensity, quality, and any other relevant factors in the patient's medical record.⁶
- **Detailed Examination of the Genital Area:** In cases where TT may be misdiagnosed as appendicitis, physicians should prioritize thorough examinations of the genital area during the history-taking and physical examination processes. It is equally important to document negative findings to avoid potential oversights.
- **Monitoring Treatment Response:** Evaluating the improvement of the patient's primary complaint following treatment, as well as monitoring any changes in clinical findings, can provide valuable insight into the effectiveness of the initial management strategy.
- **Patient Education:** In addition to addressing the primary clinical issue, healthcare providers must provide clear explanations to patients regarding alarming symptoms and the appropriate steps to take when seeking care at a medical facility. This information should also be documented in the medical record to ensure continuity of care.
- **Thorough Documentation:** Proper documentation of all findings in the patient's medical record is critical. This practice not only serves as a valuable resource for defending

the clinical actions of the medical team in the event of ambiguities or potential medical malpractice claims, but it also ensures accountability and facilitates quality improvement in patient care.

Conclusion

Concerns regarding physician performance, coupled with allegations of diagnostic and treatment errors, present significant challenges across all medical specialties. These challenges are particularly pronounced in specific scenarios, such as testicular torsion, where misdiagnosis can lead to irreversible consequences, including infertility, despite the relatively low incidence of the condition.

Research indicates that testicular torsion ranks as the fourth most common diagnostic error, underscoring the complexities involved due to its nonspecific symptoms, which can easily

precipitate misunderstandings and adverse outcomes. It is essential to recognize that illness represents a dynamic process, and various conditions may manifest with similar clinical symptoms. This overlap of symptoms not only complicates diagnostic and therapeutic pathways but may also engender concerns regarding potential negligence among the medical team from the perspective of patients and their families. To mitigate these challenges, it is imperative to meticulously attend to clinical symptoms, document them thoroughly in the patient's medical record, and ensure that appropriate medical orders are consistently maintained throughout the hospital stay and at the point of discharge. Such diligence can help to alleviate patient apprehensions and reduce the likelihood of legal challenges.

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