CASE REPORT

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Drug-Induced Acute Interstitial Nephritis with Surprise Final: A Concealed Suicide

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ABSTRACT Acute interstitial nephritis is among the causes of abdominal pain. We aimed to demonstrate acute interstitial nephritis, which can occur after intentional drug use as a suicide attempt and can be confused with acute abdomen. A 15-year-old girl described abdominal pain. She was referred to a nephrology department because her serum creatinine value was 3.4 mg/dL. Although the patient was asked about any drug use, she stated that she had not taken any medication. However, the patient stated that she had taken 13 tablets of valproic acid and doxycycline after the kidney biopsy. The pathology report of the kidney biopsy was consistent with an acute tubular interstitial nephritis case. In this case, unnecessary kidney biopsy was performed because the patient did not express her history clearly.

Keywords: Acute abdomen; nephritis; suicide attempt by drug-use; teenage; misdiagnose

Abdominal pain is a common complaint that frequently leads to admission to hospitals in both infants and adults.[1] Since acute abdomen may require surgical intervention, the abdominal pain should be evaluated urgently. Thus, every abdominal pain should be taken into account by medical practitioners in terms of whether there is a surgical emergency or not. Although the most common causes of acute onset abdominal pain in the adolescent group are well-known diseases such as acute gastroenteritis, constipation, systemic respiratory viral illness, and mesenteric lymphadenitis; sometimes the reason is an acute abdomen that will require surgical intervention.[2] In this age group, drug intake and related adverse drug reactions should also be considered. Since teenage patients can concealed their medication intake, drug-related complications can be confused with true acute abdomen.[3]

Acute interstitial nephritis (AIN) is also among the lesser-known causes of abdominal pain. It is an immune-mediated type of tubulointerstitial kidney damage that can take place as the result of a secondary or a reactive process; especially as a result of drugs, autoimmune diseases, infections, and some hematological disorders.[4] Tubulointerstitial inflammation was first described by Biermer and was defined as the distinct entity of AIN by Councilman.[5-7] Medications are by far the most frequent cause of acute interstitial nephritis. Drugs cause a low but significant dose-independent risk of starting a hypersensitivity reaction that can cause acute interstitial nephritis. Other causes include autoimmune diseases, infections, sarcoidosis, and uveitis. As a result of family conflicts and disagreements, suicide cases due to drug use can be seen in adolescence. Although some suicide cases are known to result in death, most suicide cases especially attempted by female patients, resulting in mild to moderate clinical symptoms. Diagnosis is difficult when adolescent patients conceal their drug intake. A meticulous anamnesis taking and performing a thorough physical examination is crucial to determine the origin of acute abdominal pain

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and it's important to terms of identifying the other rare conditions; because an excessive number of different underlying causes may make it difficult to diagnose. In this case, the distinction between acute abdomen, interstitial nephritis and suicide was delayed because the patient did not clearly state that she was using medication. Suicide attempt due to drug use should always be kept in mind in adolescent patients presenting with the complaint of abdominal pain. Kidney biopsy should not be rushed, especially in cases where serum creatinine elevation and interstitial nephritis are suspected. Consent for publication was obtained from the family of the patient.

CASE REPORT

A 15-year-old adolescent girl was admitted to the pediatric emergency service with severe abdominal pain that had been ongoing for 3 days. She had no other complaints with additional symptoms such as fever, nausea, vomiting, and diarrhea. On physical examination; vital signs such as fever (37.4°C), pulse (90/min), respiratory rate (22/min), arterial blood pressure (107/65 mmHg) were stable. Cardiovascular and respiratory system examination were normal. On abdominal examination, severe tenderness was present in the right lower quadrant. Laboratory tests showed moderate leukocytosis (14.58x10^9/L) and high serum creatinine value (3.2 mg/L). Abdominal ultrasonography was performed to rule out causes of acute abdomen such as appendicitis or ovarian torsion and also to evaluate the kidneys. There was free fluid around the caecum according to the ultrasound report, and practitioners of paediatric surgery were consulted for the suspected acute appendicitis. While the patient was being monitored for acute abdomen, she was referred to the pediatric nephrology service due to the continued high serum creatinine value (3.4 mg/dL). The serum creatinine value of the patient, who was followed up with a preliminary diagnosis of acute renal failure, first increased to 3.9 mg/dL and then to 4,69 mg/dL. In other laboratory tests such as complement 3-4 (C3-C4), electrolyte values in blood biochemistry were normal. The presence of anemia, and eosinophilia in complete blood count was not seen. In the urinalysis, 3+ proteinuria was detected but it was not hematuria or pyuria as well. Arterial blood pressure values which evaluated to be systolically and diastolically (98/65 mmHg) were normal. The patient was started on Methylprednisolone (1 mg/kg/day) intravenously. The serum creatinine values measured on the 3rd day of the her hospitalization decreased to 1.65 mg/dL. Kidney biopsy was performed on the patient. Although the patient was questioned about the drugs she had used during her hospitalization, she reported to not taking any medication. However, the patient stated that she took 13 tablets (valproic acid and doxycycline) after a kidney biopsy. After the drug overdose was learned, all laboratory and radiological examinations performed during the hospital follow-up of the patient were examined and no significant pathology was detected except for the high creatinine level. The pathology result of the kidney biopsy of the patient was compatible with acute tubular interstitial nephritis. According to the microscopic evaluation, interstitial edema and lymphocyte and eosinophil accumulation in the interstitium were observed (Figure 1, Figure 2). The girl was kept under observation for a week.

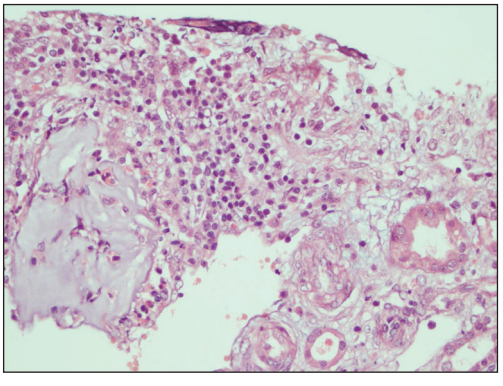

FIGURE 1: Lymphocytes and eosinophils are seen in the interstitium (H&E 200x).

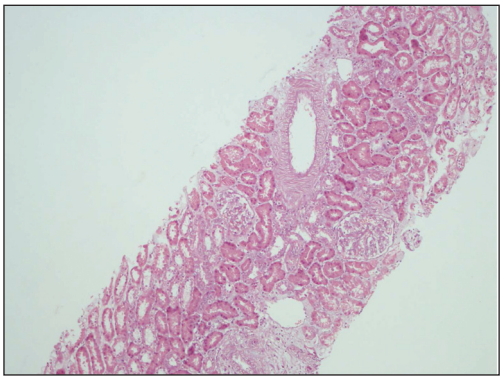

FIGURE 2: Tubules and glomeruli edema in the interstitium (H&E 40x).

He was discharged uneventfully. Serum creatinine values checked in subsequent controls, were normal.

DISCUSSION

AIN is described as the infiltration of inflammatory cells into the renal interstitium. This infiltration results in kidney injury. It causes acute renal failure in approximately one in 3 cases.[8] Most patients with AIN, regardless of the causes, present symptoms such as lassitude, fever, abdominal pain, vomiting or signs of acute deterioration in kidney function. In our case, the patient's first symptom was severe abdominal pain. As in our case, patients have severe abdominal pain due to the pressing of the renal capsule caused by an interstitial event. In almost all cases of acute tubulointerstitial nephritis, renal symptoms and signs are accompanied by deterioration in renal functions.[9,10] Although oliguria is common in patients with AIN, oliguria was not seen in our case. In AIN cases, signs of a hypersensitivity reaction such as maculopapular rash, fever, and eosinophilia may be seen, but it was not detected in our patient. In fact only 10% of patients have these three findings together (In fact, only 10% of patients have these 3 findings together.).[11] Although controlled randomized studies are not yet convincing enough, methylprednisolone therapy is still the most effective approach.[10,11] In addition, the use of steroids in the treatment of AIN has been demonstrated in 3 extensive retrospective studies.[12-14]

AIN should be suspected in the presence of elevated serum creatinine in routine biochemical tests performed on the patient who is followed up regarding the clinical picture of the acute abdomen as in this case. When there is an increase in the intake of medications, especially antibiotics, the increase in the prevalence of AIN is notable. Drug intake history should be questioned more meticulously, especially when following patients in the adolescent age group. The first approach before starting treatment is to determine the etiological factor. The suspected drug should be discontinued in patients suffering from drug-related AIN.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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