An Unusual Presentation of Renal Mass in a Healthy Adult: Acute Lobar Nephronia Case Report and Review of the Literature

Sağlıklı Bir Yetişkinde Sıradışı Bir Böbrek Kitlesi Sunumu: Akut Lobar Nefroni Olgu Sunumu ve Literatürün gözden geçirilmesi

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Abstract

Acute lobar nephronia (ALN) is a kidney infection that can be confused with space-occupying solid masses. It is usually seen in children and renal abscess may develop in 25% of the cases. First-line treatment of ALN is medical treatment. Here, a 30-year-old female patient was admitted to the emergency department with nausea, vomiting, flank pain and fever. Computed tomography (CT) showed an appearance of a wedge-shaped mass in the right renal parenchyma. On the 6th day of antibiotherapy, his right side pain was completely recovered and there was no costovertebral angle tenderness on physical examination. The patient was discharged after completing 21 days of treatment without any complications. There was no mass appearance in the CT images taken on the day of discharge. Although ALN is more frequently seen in children and immunosuppressive patients, it can be seen in young adult patients as in this case.

Keywords: ALN, acute lobar nephronia, renal mass, pyelonephritis, side pain

Öz

Akut lobar nefroni (ALN), yer kaplayan katı kitlelerle karıştırılabilen bir böbrek enfeksiyonudur. Genellikle çocuklarda görülür ve olguların %25’inde renal apse gelişebilir. ALN’nin birincisi basarınca tedavi tibbi tedavidir. Hastanezdide 30 yaşında kadın hasta bulanı, kusma, yan ağrısı ve ateş şikayetlerile acil servise başvurdu. Bilgisayarlı tomografi (BT) sağ böbrek parankiminde kama şeklinde bir kitle görünümü gösterdi. Antibiyoterapinin 6. gününde sağ taraf ağrı tamamen düzeildi ve fizik muayenede costovertebral açı hassasiyeti yoktu. Hasta 21 günlik tedavi sürecinde sorunuz bir şekilde tamamladıktan sonra taburcu edildi. Taburcuğun günlük ve keşten BT görüntülerinde kitle görünümüne rastlanmadı. ALN, çocuklarda ve başkılığı baskılanmış hastalarda daha sık görülse de bu durumda olduğu gibi genç erişkin hastalarda da görülebilmediştir.

Anahtar Kelimeler: ALN, akut lobar nefroni, renal kitle, pyelonefrit, yan ağrı
Introduction

Acute lobar nephronia (ALN) is a serious infection affecting one or more lobes of the kidney. It is also known as focal bacterial nephritis. It is seen more common in children. Side pain, fever, leukocytosis and pyuria are the typical clinical indicators of ALN like pyelonephritis and renal abscess. For the diagnosis of the disease, ultrasonography (USG) and contrast-enhanced tomography (CT) are useful. It can be confused with space-occupying solid masses therefore there may delay in diagnosis.

In this study, we discussed a unique ALN case that completely resolved with antibiotic therapy.

Case Report

A 30-year-old female patient was admitted to our emergency department with complaints of nausea, vomiting, right flank pain and fever more than 40 degrees. Physical examination of the patient revealed right costovertebral angle tenderness. There was no abnormality in the complete blood count. There was only one positive erythrocyte in urinalysis. CT taken on first day of hospitalization shows that a wedge shaped image in the right kidney. Because of clinical findings and CT, a diagnosis of ALN was made. We started empirical piperacillin-tazobactam 4.5 grams four times per day to the patient. The patient’s fever subsided within 24 h. Escherichia coli was observed in the urine culture and it was determined that it was sensitive to empirical antibiotic therapy.

On the 6th day of antibiotherapy, the patient’s right flank pain was completely recovered and no sensitivity on physical examination. CT taken on 21st day of hospitalization indicates that no mass appearance in the right kidney (Figure 2). The patient was discharged without any complications after completing 21 days of treatment.

Discussion

ALN, in other words acute focal pyelonephritis, is a serious, non-liquefactive focal bacterial infection affecting one or more lobules of the kidney. It generally manifests itself with symptoms such as fever, chills, costovertebral angle tenderness and abdominal pain. It is among the benign inflammatory lesions of the kidney. ALN was first described radiologically in 1979. The frequency of diagnosis has increased due to improvements in imaging methods. Although it is more common in children, it is also seen in adults. The prevalence of children presenting with high fever and urinary tract infection is around 19%.

Typical symptoms are not always present. Reproduction may not always be present in the urine culture. The most common microorganisms identified are E. coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, Staphylococcal aureus. Symptoms of systemic infection, such as leukocytosis, leukopenia, and elevated C-reactive protein, can be seen in these patients. Pyuria is not found in most patients. Imaging is critical for proper diagnosis and treatment. A focal hypoechoic lesion in the kidney can be observed with
USG. However, its appearance can interfere with the mass. Contrast-enhanced CT is the gold standard imaging method in diagnosis. It is typical to have a wedge-shaped lesion with little or no enhancement. The corticomedullary junction is blunted due to the edema. In patients diagnosed with CT, the rate of diagnosis by USG varies between 62 and 90%\(^6,7\). Rapid diagnosis and treatment of ALN is very crucial. The renal abscess formation is observed in 25% of the patients\(^8\). If renal abscess formation develops, surgical drainage is required. ALN should be considered in the differential diagnosis in patients who present to the emergency department with complaints such as fever, lumbar pain, nausea and vomiting. Although most of these cases occurred in immunocompromised patients or in childhood period, our case was a healthy young female and the lack of any proven underlying pathology. Because of that, we think that ALN should not be forgotten in the differential diagnosis in young patients presenting with appropriate symptoms.

**Ethics**

**Informed Consent:** Consent form was filled out by all participants.

**Peer-review:** Externally peer-reviewed.

**Authorship Contributions**

**Surgical and Medical Practices:** O.N.Y., B.K., B.K., C.S.I., T.S., U.M., M.Z.K., Y.Ö.I., Analysis or Interpretation: O.N.Y., B.K., B.K., C.S.I., T.S., U.M., M.Z.K., Y.Ö.I., Literature Search: O.N.Y., B.K., B.K., C.S.I., T.S., U.M., M.Z.K., Y.Ö.I., Writing: O.N.Y., B.K., B.K., C.S.I., T.S., U.M., M.Z.K., Y.Ö.I.

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