



OPEN ACCESS

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 Olgusu Sunumu ve Literatürün Gözden Geçirilmesi

© Okan Nabi Yalbuzağ¹, © Barış Karademir¹, © Burak Karabacakoğlu¹, © Cemal Selçuk İšoğlu², © Tufan Süelözgen¹, © Uygur Miçooğulları¹, © Mehmet Zeynel Keskin¹, © Yusuf Özlem İlbey¹

¹University of Health Sciences Turkey, İzmir Tepecik Education and Research Hospital, Clinic of Urology, İzmir, Turkey

²Ceyhan State Hospital, Clinic of Urology, Adana, Turkey

Cite as: Yalbuzağ ON, Karademir B, Karabacakoğlu B, İšoğlu CS, Süelözgen T, Miçooğulları U, Keskin MZ, İlbey YÖ. A Case of Pilomatricoma Associated with Neurofibromatosis Type 2 in Childhood. J Tepecik Educ Res Hosp 2022;32(1):155-7

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 birinci basamak tedavisi tıbbi tedavidir. Hastanemizde 30 yaşında kadın hasta bulantı, kusma, yan ağrısı ve ateş şikayetleriyle acil servise başvurdu. Bilgisayarlı tomografi (BT) sağ böbrek parankiminde kama şeklinde bir kitle görünümü gösterdi. Antibiyoterapinin 6. gününde sağ taraf ağrısı tamamen düzeldi ve fizik muayenede kostovertebral açı hassasiyeti yoktu. Hasta 21 günlük tedavisini sorunsuz bir şekilde tamamladıktan sonra taburcu edildi. Taburculuk günü çekilen BT görüntülerinde kitle görünümüne rastlanmadı. ALN, çocuklarda ve bağışıklığı baskılanmış hastalarda daha sık görülse de bu durumda olduğu gibi genç erişkin hastalarda da görülebilmektedir.

Anahtar Kelimeler: ALN, akut lobar nefroni, renal kitle, piyelonefrit, yan ağrısı



Address for Correspondence/Yazışma Adresi: Okan Nabi Yalbuzağ MD, University of Health Sciences Turkey, İzmir Tepecik Education and Research Hospital, Clinic of Urology, İzmir, Turkey
Phone: +90 532 301 59 49 **E-mail:** okanyalbuzağ@hotmail.com
ORCID ID: orcid.org/0000-0001-6172-3411

Received/Geliş tarihi: 20.05.2021
Accepted/Kabul tarihi: 17.07.2021

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⁽¹⁾. 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⁽²⁾.

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

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 (Figure 1). 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 antibiotherapy.

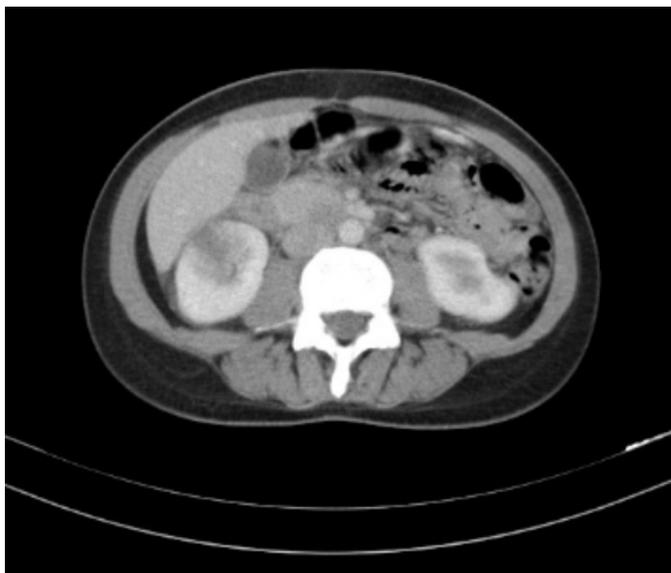


Figure 1. Typical acute lobar nephronia abdomen computed tomography image of the right kidney

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⁽²⁾. It is among the benign inflammatory lesions of the kidney. ALN was first described radiologically in 1979⁽³⁾. 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%⁽⁴⁾.

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⁽⁵⁾. Imaging is critical for proper diagnosis and treatment. A focal hypoechoic lesion in the kidney can be observed with



Figure 1. Contrast-enhanced abdomen computed tomography on discharge day

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.İ., T.S., U.M., M.Z.K., Y.Ö.İ., Concept: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K., Y.Ö.İ., Design: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K.,

Y.Ö.İ., Data Collection or Processing: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K., Y.Ö.İ., Analysis or Interpretation: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K., Y.Ö.İ., Literature Search: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K., Y.Ö.İ., Writing: O.N.Y., B.K., B.K., C.S.İ., T.S., U.M., M.Z.K., Y.Ö.İ.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Frieyro Seguí MI, Martín Aguado MJ, Canals Baeza A, Molla Nicova J, Camps Herrero J, Segarra Aznar F. Acute lobar nephronia. Report of 3 new cases. *An Esp Pediatr* 2001;55:269-72.
2. Li Y, Zhang Y. Diagnosis and treatment of acute focal bacterial nephritis. *Chin Med J (Engl)* 1996;109:168-72.
3. Rosenfield AT, Glickman MG, Taylor KJ, Crade M, Hodson J. Acute focal bacterial nephritis (acute lobar nephronia). *Radiology* 1979;132:553-61.
4. Seidel T, Kuwertz-Bröking E, Kaczmarek S, et al. Acute focal bacterial nephritis in 25 children. *Pediatr Nephrol* 2007;22:1897-1.
5. Pearle M, Lothan Y. Urinary Lithiasis: Etiology, Epidemiology, and Pathogenesis. In Kavoussi L, Partin A, Andrew N, Peters C (eds). *Campbell-Walsh Urology*. 10th. Philadelphia, Elsevier Health Sciences; 2012. p. 3098.
6. Cheng CH, Tsau YK, Lin TY. Effective duration of antimicrobial therapy for the treatment of acute lobar nephronia. *Pediatrics* 2006;117:84-9.
7. Cheng CH, Tsau YK, Hsu SY, Lee TL. Effective ultrasonographic predictor for the diagnosis of acute lobar nephronia. *Pediatr Infect Dis J* 2004;23:11-4.
8. Conley SP, Frumkin K. Acute lobar nephronia: a case report and literature review. *J Emerg Med* 2014;46:624-6.