



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research  
Vol. 11, Issue, 03, pp.2094-2095, March, 2019

DOI: <https://doi.org/10.24941/ijcr.34650.03.2019>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

## RESEARCH ARTICLE

# RENAL SINUS LIPOMATOSIS MIMICKING AS EMPHYSEMATOUS PYELONEPHRITIS

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### ARTICLE INFO

#### Article History:

Received 21<sup>st</sup> December, 2018

Received in revised form

06<sup>th</sup> January, 2019

Accepted 17<sup>th</sup> February, 2019

Published online 31<sup>st</sup> March, 2019

#### Key Words:

RSL (Renal sinus lipomatosis),  
RRL (Renal replacement lipomatosis),  
EPN (emphysematous pyelonephritis).

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**Citation:** Dr. Ranjan Kumar Satish, Dr. Mittal Ankur, Dr. Kumar Sunil and Dr. Prakash Bhirud Deepak. 2019. "Renal sinus lipomatosis mimicking as emphysematous pyelonephritis", *International Journal of Current Research*, 11, (03), 2094-2095.

### ABSTRACT

Renal sinus lipomatosis are condition, seen in the kidneys of elderly patients. Disease is usually unilateral and associated with renal calculi. There is proliferation of excessive lipomatous tissue in renal sinus, renal hilum and peri-renal space. Presentation of disease is varied, ranging from chronic renal pain to features of renal abscesses or pyonephrosis. Here we report a interesting case of bilateral renal sinus lipomatosis mimicking as emphysematous pyelonephritis.

## INTRODUCTION

Long standing inflammation or infection of kidney may lead to atrophy and destruction of renal tissue, which is replaced with diffuse fat density in elderly known as renal sinus lipomatosis or in extreme case as renal replacement lipomatosis (Ambos, 1978 and Prasad, 2012).

### Case History

A 66 years old diabetic male, presented in emergency with high grade fever, bilateral flank pain, and burning micturition since last 20 days. On abdominal examination bilateral flank tenderness was present. Laboratory parameters were as follows total leucocyte count 13220 /mm<sup>3</sup>, with neutrophils 82.6%, serum creatinine was 2.4mg/dl, sodium 120mmol/l, potassium 6.7mmol/l. Ultrasonography showed bilateral multiple renal calculi with hyperechoic mass around renal pelvis and multiple air foci within renal pelvis, highly suggestive of EPN. Considering Diabetes mellitus as a risk factor clinical diagnosis of EPN was made and broad spectrum antibiotic started. NCCT images were falsely interpreted as bilateral EPN with multiple renal calculi.

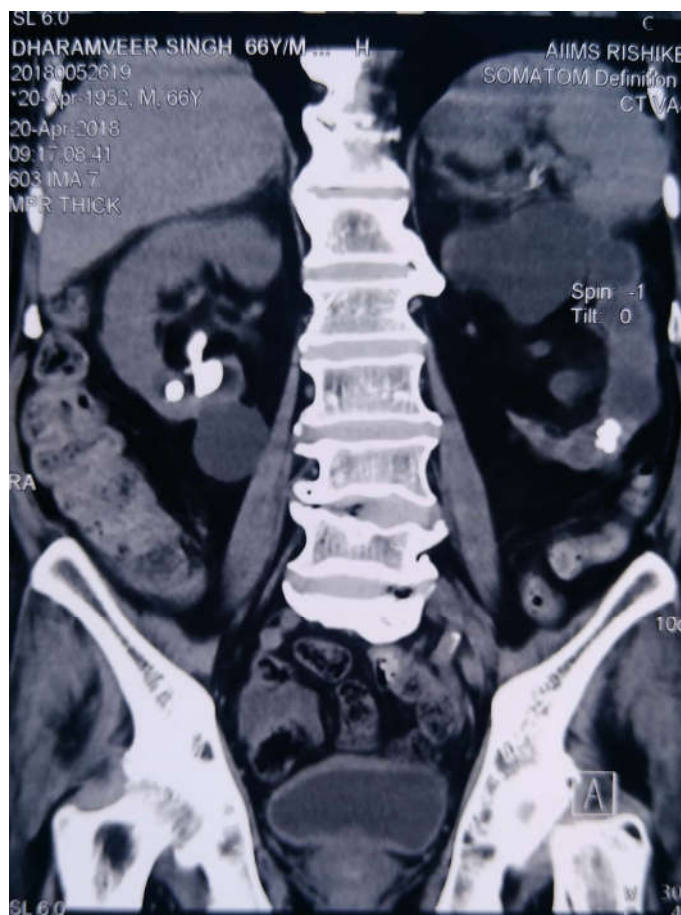
Later on after discussion with Radiology department it was reported as bilateral diffuse fat density mass (HU -20) surrounding renal sinus and pelvis (Figure 1) with multiple pelvic and cyleceal calculi, largest measuring 21x 19mm. There was remarkable fat density with relative parenchymal atrophy noted in left side (Figure 2) and no air density found within pelvis or parenchyma. Bilateral DJ stenting was done and electrolytes and serum creatinine came within normal range (1.2 mg/dl) with conservative management. Patient responded well with treatment and was planned for bilateral PCNL on selective basis.

## DISCUSSION

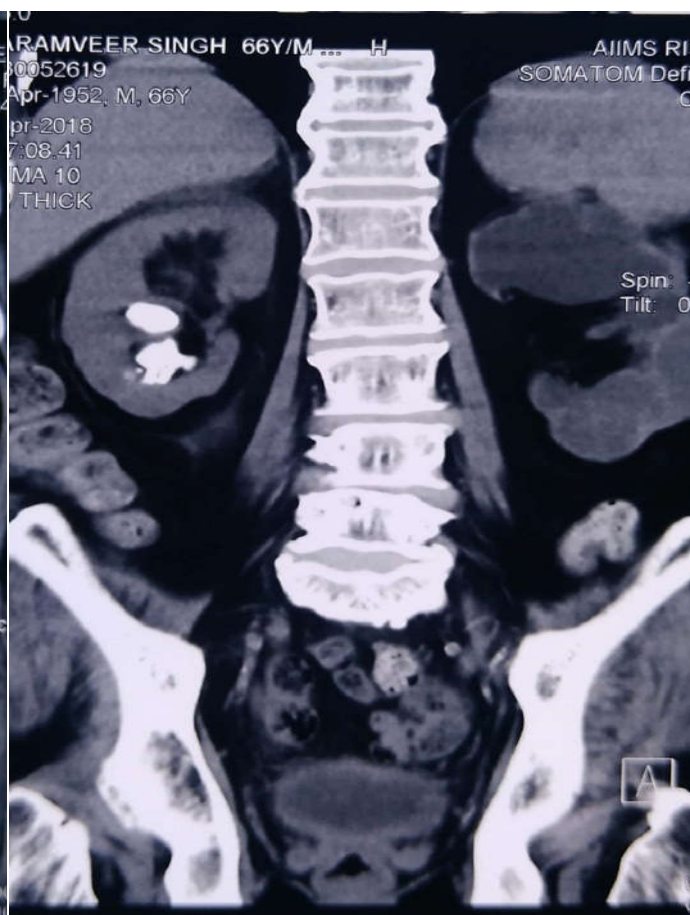
RSL or RRL is different degree of renal sinus fat proliferation. In RRL almost all renal parenchyma is replaced by fatty tissue. Important differential diagnosis of replacement lipomatosis are xanthogranulomatous pyelonephritis and emphysematous pyelonephritis, which are very difficult to differentiate radiologically (Kiris, 2005). On sonography RSL or RRL appears as a hyperechoic mass in the renal fossa, suggestive of fatty tissue with or without visualization of calculus. Computed tomography is the most accurate imaging modality to diagnose RSL, showing fat density mass surrounding renal sinus and adjacent parenchymal atrophy (Subramanyam, 1983).

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**Figure 1.** NCCT image showing bilateral fat density surrounding right renal sinus and pelvis with multiple calculi and right renal lower pole simple cyst



**Figure 2.** NCCT image showing remarkable fat density surrounding left renal sinus and pelvis with multiple right renal calculi.

MRI can differentiate other fat containing lesion of renal sinus like lipoma, liposarcoma and angiomyolipoma from RSL or RRL (Prasad, 2012) in which there are only fatty mass without parenchymal atrophy or renal calculi. Association of RRL is commonly seen with stone disease and the aging population but disease association with renal tuberculosis and post renal transplantation and steroid replacement therapy also have been reported (Chang, 2005).

### Conclusion

Emphysematous pyelonephritis needs very aggressive management because of high mortality rate. So in elderly diabetic patients in whom a provisional diagnoses of emphysematous pyelonephritis is made, it is always wise to be aware and keep Renalsinuslipomatosis or replacement lipomatosis in the differential diagnosis. This helps in better prognostication and management of underlying disease.

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