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Case Report: Renal Infraction Secondary to Left Ventricular Thromboembolism from Ischemic Heart Disease

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Abstract

Renal infarction, often caused by thromboembolism from cardiac sources, requires early diagnosis and treatment to prevent irreversible renal damage. We present a case of a 47-year-old male doctor with severe abdominal pain, diagnosed with multiple left renal cortical infarctions secondary to a left ventricular thrombus post-myocardial infarction. Anticoagulation therapy was initiated upon admission, leading to favorable recovery.

Key Words: Renal Infraction, Ventricular Thromboembolism, Ischemic Heart Disease

INTRODUCTION:

Renal infraction has many causes the most common is renal artery embolism from cardiac thrombus as in our case. Others are caused by trauma, iatrogenic, a complication of the endovascular procedure, spontaneous right atrium thrombosis or aortic dissection associated with atherosclerosis disease, and other inflammatory vasculitis leading to an infraction. Renal infractions are usually missed or diagnosed late because presentation mimics common conditions such as nephrolithiasis and pyelonephritis we report a case of renal infraction where the diagnosis was made based on clinical and radiological findings

CASE HISTORY:

Patient Presentation:

On 23/11/2020, the patient presented with severe central abdominal and left flank pain, associated with vomiting. No fever, diarrhea, or urinary symptoms were reported.
History of right renal stone treated with lithotripsy three years prior.

Cardiovascular History:
Two years prior, experienced severe chest pain leading to ventricular fibrillation and cardiac arrest. Subsequent coronary angiography revealed left main coronary artery disease.

Current Presentation:
On examination, conscious, oriented, afebrile, with a pain score of 10/10. Stable vital signs. Abdominal examination revealed tenderness in the central abdomen and left flank.

Family History:
His father died at the age of 50 years old from IHD.

Laboratory Findings:
Blood urea 5.8, serum creatinine 115 on admission (now 98). Normal serum electrolytes. Elevated LDH (400 U/L). Normal complete blood count, coagulation profile, and thrombophilia screening were normal. Urine analysis (pus cells/HPF 6—10, RBCs/HBF 0—2, and negative urine culture.

Imaging:
US:
Kidney, ureter, and pelvis ultrasound shows both kidneys were normal in size and echogenicity.
Doppler US:
Carotid Doppler ultrasound was normal.
CT Abdomen:
CT abdomen with contrast shows multiple left renal cortical hypodense lesions consistent with infarctions.

Figure 1: Abdominal CT with contrast

Echocardiography: was normal apart from left ventricular ejection fraction of 37%
MRI chest without contrast shows a left ventricular ejection fraction of 37% and a left flat thrombus measuring 19mm times 4mm.
Nuclear Scan:
Renal TC DMSA was done two months later and showed multiple cortical defects and reduced filtration of the left kidney and normal compensatory right kidney.

Figure 2: TC DMSA for renal system

Management:

Initially, heparin infusion was followed by oral apixaban and opioid analgesics, Discharged on apixaban, clopidogrel, atorvastatin, valsartan, and bisoprolol.

DISCUSSION:

Renal infarction diagnosis requires high clinical suspicion due to nonspecific symptoms. Common causes include cardiac thromboembolism and iatrogenic factors. Early recognition and treatment are crucial. The autopsy series suggests the incidence is between 0.5 and 1.5%, a high clinical suspicion is required for the diagnosis of renal infraction because the presenting symptoms are common to those of several other disorders such as nephrolithiasis and pyelonephritis. Renal infractions are commonly caused by trauma, renal artery embolism from cardiac thrombus, dissection, and iatrogenic complications of endovascular procedures.

Other causes such as atherosclerotic disease of the aorta or renal artery stenosis but another inflammatory vascular disease can lead to infraction. Less common causes of infraction are hypercoagulable states Most patients with renal infraction present with nonspecific symptoms such as abdominal pain, vomiting, and fever which mimic the picture of nephrolithiasis and pyelonephritis so I suggest having a scoring system to evaluate renal infraction and pick it early as serious and sequence of renal infraction.

Renal Infraction Score:

Proposed scoring system to aid early diagnosis based on symptoms, LDH levels, risk factors, and history.

Suggestion Renal infraction Score:

Symptoms or signs	Absent	Present
1. Lion pain with or without abdominal pain	(0)	(1)
2. LDH high(no MI, no hemolysis)	(0)	(2)
3. Risk factors (AF, IHD, trauma, N.S, hypercoagulable state, and renal transplant)	(0)	(2)
4. History of renal stone	(1)	(0)
5. Frank hematuria	(1)	(0)

More than 4 high probability of renal infarction

3-4 moderate probability of renal infarction

Less than 3 low probability of renal infarction

CONCLUSION:

Renal infarction poses diagnostic challenges resembling common conditions like nephrolithiasis and pyelonephritis. CT angiography remains pivotal for diagnosis. Anticoagulation therapy is essential for preventing recurrence in high-risk patients

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