

## ACUTE RENAL CORTICAL NECROSIS

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A 78-year-old cholecystectomized female Caucasian patient without comorbidities presented with 3 days of abdominal band-like pain and fever, and started treatment for presumed acute pyelonephritis. Despite antibiotic therapy, the patient developed dyspnea, hypotension, and clinical and laboratory signs of sepsis. She was admitted to the Hospital de Clínicas de Porto Alegre with septic shock, without an initially set focus. There was clinical deterioration characterized by acute respiratory failure and acute renal failure (ARF), and supportive measures were initiated. Imaging tests of the chest and abdomen were performed in order to assess the consequences of septic shock, among them, mesenteric ischemia.

A computed tomography (CT) of the abdomen with intravenous injection of iodinated contrast medium showed reversal of renal nephrogram, characterized by the absence of cortical uptake of both kidneys, and highlight only of the renal medullary (Figures 1 and 2). The spleen showed ischemic areas. There was no sign of mesenteric ischemia or other significant findings.

Acute cortical necrosis (ACN) typically manifests itself on a CT study contrasted with the lack of uptake of the renal cortical layer and standard uptake of the medullar layer. Another possible finding is a thin subcapsular enhancement resulting from collateral flow (1). When the late phase is carried out, there is no excretion of the contrast medium. ACN is a rare cause of ARF, determined by significant reduction in renal blood flow, with relative sparing of the renal medullary and is usually bilateral (1). Its causes include conditions that lead to severe and prolonged

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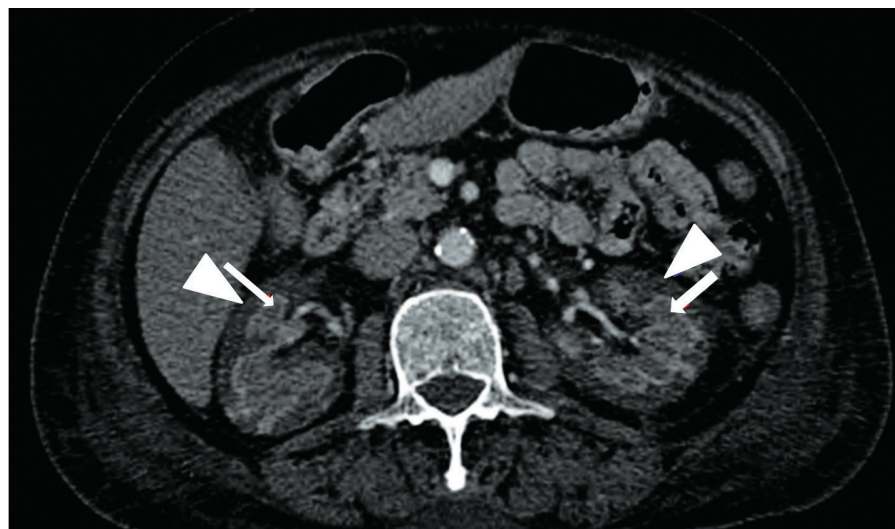
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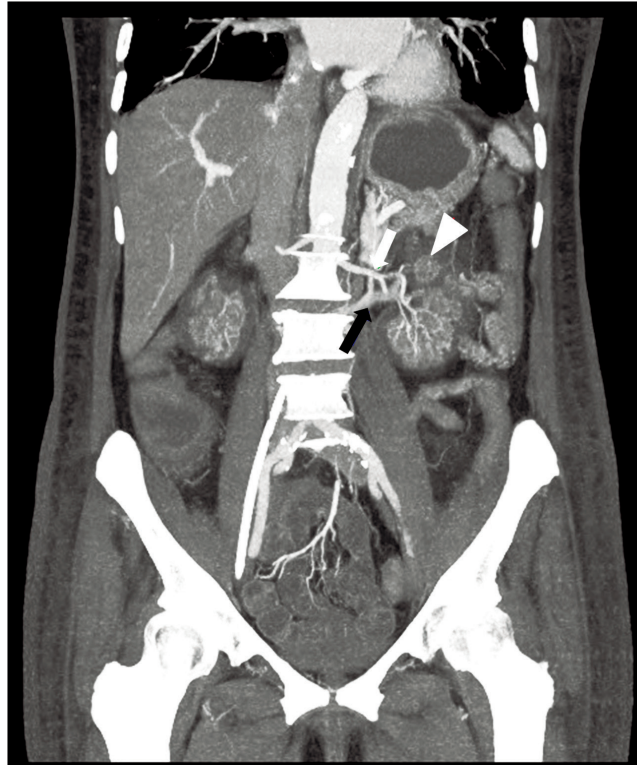
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**Figure 1:** Abdomen CT, axial plane, arterial phase: showing the cortices of both hypodense and without uptake kidneys (arrowhead) compared to the highlighted renal medullary (white arrow).

shock, transfusion reaction or other causes of intravascular hemolysis, renal transplant rejection, and obstetric complications. Disseminated intravascular coagulation, vasospasm and damage

to the glomerular endothelium are mechanisms that may be implicated in this condition. Renal failure due to ACN is usually irreversible and no specific treatment is recommended.



**Figure 2:** Abdomen CT, MIP TC reconstruction, coronal plane: an uptake of the renal medulla is observed (arrowhead). Renal arteries and veins are patent (white and black arrows, respectively).

## REFERENCE

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