

## Surgical Treatment of Patient with Renal Infarction

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**Abstract:** Renal infarction is an uncommon cause of acute abdomen thus the clinical diagnosis is difficult. With the advent of endovascular procedures, nephrectomy is increasingly less used as a treatment for kidney infarction. In this report, we present a patient with renal infarction who was submitted to surgery.

**Keywords:** Renal infarction . Treatment . Surgery . Endovascular therapy

### INTRODUCTION

Renal infarction is an uncommon cause of acute abdomen and thus the clinical diagnosis is difficult.[1,2]

Renal infarction may be caused by embolism, arterial dissection, venous thrombosis, vasculitis or renal trauma.[3]

In patients with renal infarction, treatment can be conservative, endovascular or surgical. The endovascular approach is indicated in minor cases of short evolution that have associated clinical complications such as renovascular hypertension.[4] Complete nephrectomy is indicated in cases of extensive ischemic injury, with a laparotomy

approach for concomitant treatments such as in cases of blunt or penetrating abdominal trauma.[4]

With the advent of endovascular procedures, nephrectomy is increasingly less used as a treatment for kidney infarction. Herein we present the case of a patient with renal infarction who was submitted to surgery.

### CASE REPORT

A 36-year-old female patient was seen in the emergency room with a five-day history of abdominal pain and renal infarction was clinically diagnosed and confirmed by computed tomography (Figure 1).

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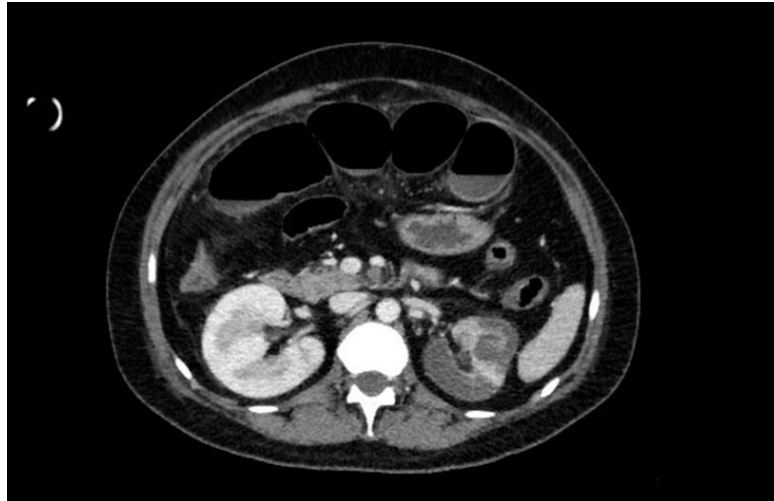
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**Figure 1.** Computed tomography scan showing renal infarction evidenced by lack of diffuse uptake of intravenous contrast in the left kidney

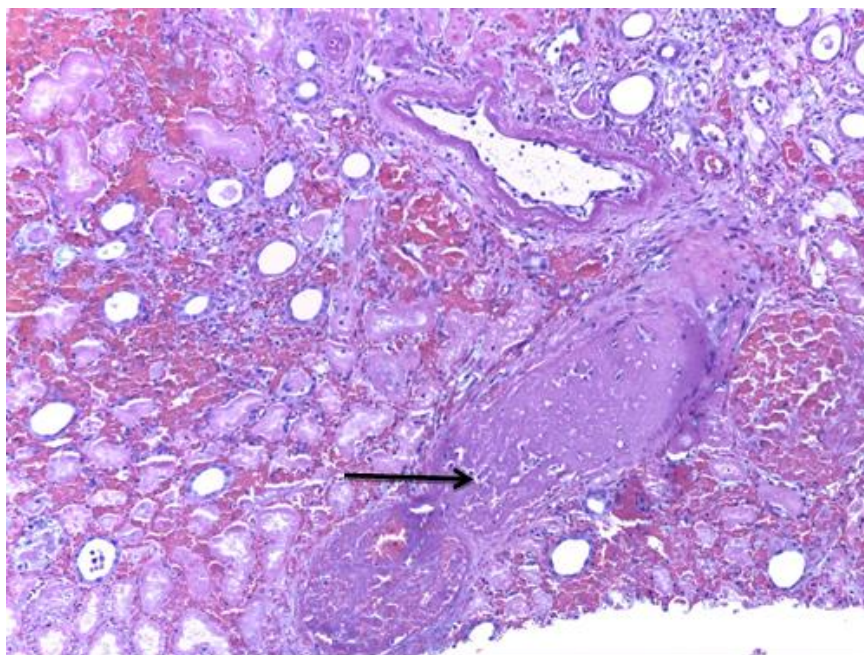
With contraindications for an endovascular approach due to the severity of her condition that included extensive mesenteric thrombosis, the patient was submitted to exploratory laparotomy on the day of admission, followed by extensive bowel resection and complete removal of the left kidney.

After these surgical procedures, the patient was transferred to the intensive care unit (ICU), where she evolved with anastomotic dehiscence on the third day, progression of the mesenteric thrombosis,

peritonitis and sepsis on the fifth day and distal embolization on the eighth day of hospitalization.

The patient was submitted to a reoperation to treat the mesenteric thrombosis and fecal peritonitis on the fifth day in the ICU but died on the 11<sup>th</sup> postoperative day.

The result of histopathology confirmed the diagnosis of multifocal arterial thrombosis (renal hilum and the intraparenchymal arteries) associated with extensive corticomedullary ischemic necrosis (Figure 2).



**Figure 2.** Photomicrograph showing thrombosis of the intraparenchymal renal artery (Hematoxylin and eosin stain; magnification 100X)

## DISCUSSION

With the advent of endovascular approaches in cases of renal infarction, nephrectomy is today considered an exceptional conduct.[4] However, here there was a classic indication for surgery.

In this case, the therapeutic decision was based on the time after the onset of symptoms (five days), which resulted in extensive ischemic injury and thrombotic events. According to Fergany & Novik [4] endovascular procedures should be performed within a few hours. Therefore, early diagnosis of renal infarction is essential to define the type of treatment.

Considering the contraindication for endovascular treatment in this patient, there were no perioperative complications after the nephrectomy. On the other hand, the clinical severity of the renal infarction adversely influenced the outcome.

In countries with restrictions in the available diagnostic arsenal, confirmation of renal infarction and the therapeutic decision are still a challenge. In severe cases, diagnosis should be early with the aim of rapid endovascular treatment. However, when the diagnosis is delayed, nephrectomy is indicated to prevent the complications of renal infarction.

**Conflicts of interest:** none

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