

## When a kidney stone becomes a killer

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### Abstract

This case report aims to raise awareness of the seriousness of neglecting a kidney stone which can turn into a killer destroying the entire renal parenchyma and lead to radical treatment.

The development of new endoscopic techniques such as mini NLPC and ureteroscopy has made it possible to improve the management of kidney stones and even complex corraliform stones.

Nephrectomy by lombotomy remains an open surgical technique among others which allows the removal of the diseased kidney to avoid the appearance of complications such as pyelonephritis and pyonephrosis.

**Keywords:** Renal calculus; Corraliform kidney; Total nephrectomy; Non-functional kidney

### 1. Introduction

Advances in endourology have considerably reduced the indications for open surgery in the treatment of corraliform kidney stone. Nevertheless, in our experience, open surgery still represents the treatment of choice in some cases. This is the case reported in this article, where a total nephrectomy was the treatment of choice for this patient with a dumb kidney on a corraliform stones.

### 2. Case report

This is a 69-year-old female patient with no specific pathological history, who presented with intermittent right-sided renal colic, prompting self-medication with analgesics, before undergoing a uroscanner, which revealed a mute right kidney with little or no cortical index, prompting her referral to our university hospital center. Clinically, the patient was hemodynamically and respiratory stable, afebrile at 37, BP 13/8, with slight right lumbar tenderness without lumbar contact.

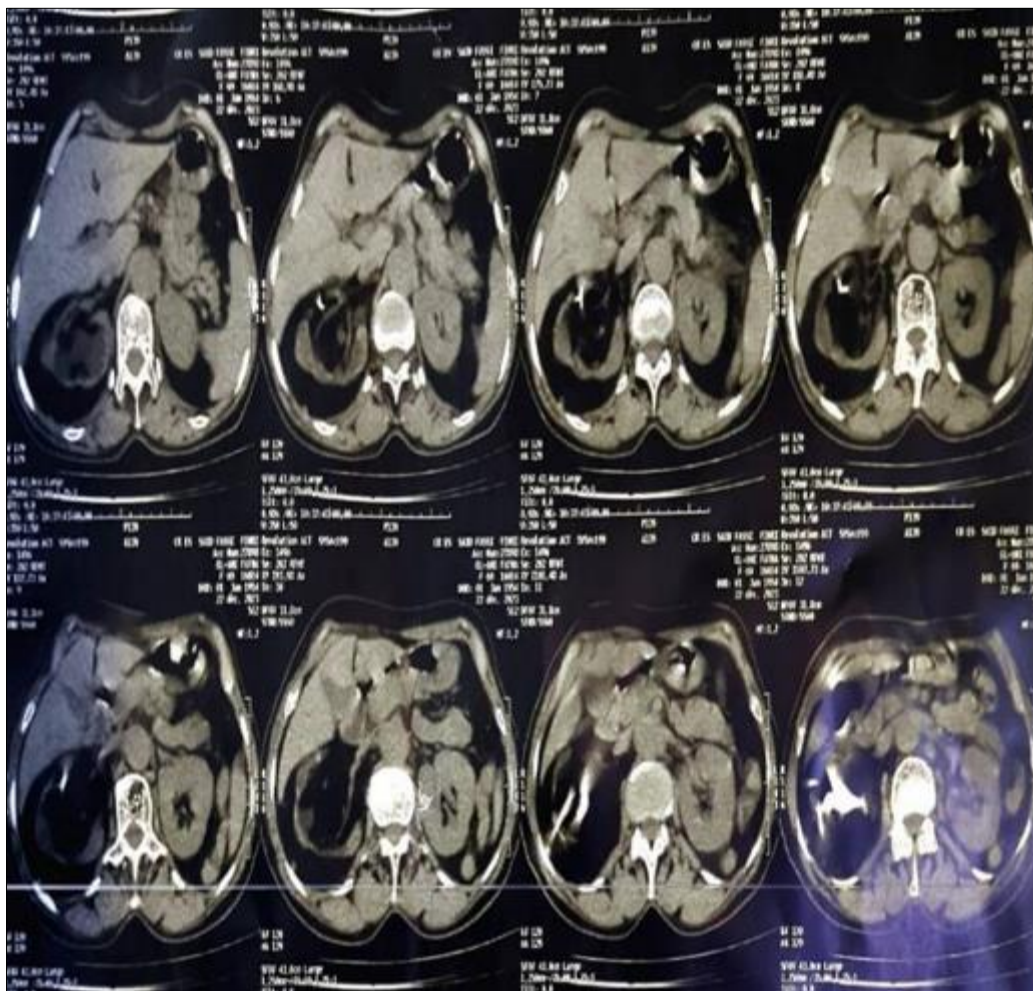
Clinical chemistry: HB 13.2, WBC 7000, Platelets 250000, PT 100%, Creatinemia 10mg/l, Urea 0.37 micromoles/L, Kaliemia 3.5mmol/L, Na 135mmol/L, ECU was sterile.

Uroscanner: right kidney silent and lamina with destroyed cortical index (Fig. 1) upstream of a 2.7cm coralliform pyelic calculus (Fig. 2), left kidney non-dilated with presence of 3 stasis calculations, the largest measuring 08mm long axis.

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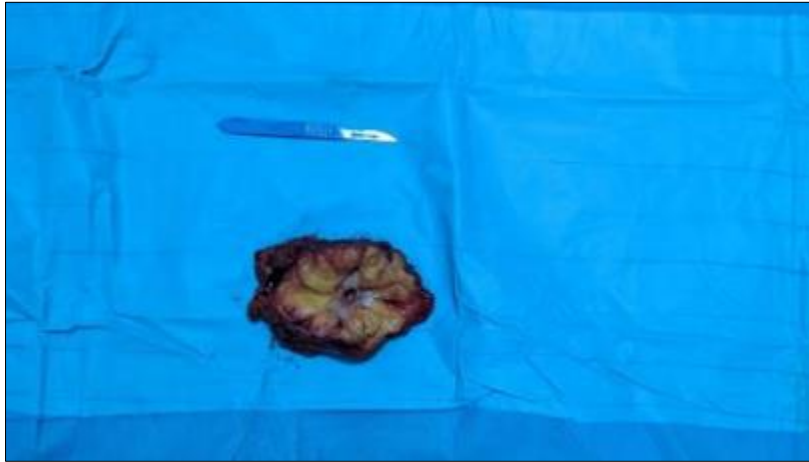


**Figure 1** Axial section CT image showing a destroyed rectus with a corraliform pyelic calculus



**Figure 2** Axial CT images showing the state of the renal cortex at different levels, with dilatation and lipomatosis occupying almost the entire renal space

The treatment chosen was a total nephrectomy, extended on the right, via a lombotomy approach, after obtaining the patient's consent ; the surgical specimen (Fig.3) showed a speculated blackish calculus (Fig.4).



**Figure 3** Surgical specimen: a kidney with virtually no parenchyma, replaced by adipose tissue



**Figure 4** The corraliform calculus responsible for the destruction of the renal parenchyma

The evolution was marked by good healing, normal control renal function and the introduction of a nephroprotective protocol for a single kidney. The next stage of treatment will be laser URSS for left renal lithiasis.

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### 3. Discussion

The incidence of urinary lithiasis is increasing. This is linked to changes in dietary habits, sanitary conditions, population living standards and the high prevalence of diseases associated with urinary stone formation, notably diabetes, metabolic syndrome and obesity, which have led to a significant increase in the incidence of lithiasis disease [1].

Although kidney stones are more common in men, coralliform stones are less frequently reported in men than in women [2].

For treatment, according to the European Association of Urology guidelines (EAU guidelines), the indications for open surgery are: complex coralliform calculus, failure of LEC, NLPC or ureteroscopic procedures; intra-renal anatomical anomalies : infundibular stenosis, calculus in a calcific diverticulum (particularly in an anterior calyx), obstruction of

the pyeloureteral junction and stenosis if endo-urological procedures have failed or are not promising, morbid obesity, skeletal deformities, fixed hip and leg deformities, heavy comorbidities concomitant open surgery: non-functional lower pole (partial nephrectomy), non-functional kidney (nephrectomy), patient choice who after failure of a minimally invasive procedure prefers to avoid the risk of having to resort to several other surgeries; calculus in an ectopic kidney where percutaneous access may be difficult or impossible [3]. This reinforces our therapeutic attitude.

In half the patients, the macroscopic appearance of the stones was blackish, spiculated and between 0.5 and 3 cm in size. This is consistent with the appearance of our stone [4].

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#### 4. Conclusion

Coralliform lithiasis refers to stones that are radiologically coral-shaped, or staghorn. Coralliform calculus [5] are pyelic pieces with at least two extensions in the caliceal stalks [6]. This is a serious form of renal lithiasis. If left untreated, it will inevitably lead to kidney destruction [6].

The incidence of coralliform lithiasis is increasing. This is a serious form of renal lithiasis. If left untreated, it will inevitably lead to kill the kidney. It is therefore essential to treat it as early as possible.

Reaching this terminal stage, the recommended treatment, is a total nephrectomy, according to EAU recommendations. [3]

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#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

##### *Statement of ethical approval*

I also undertake to respect the policy in the ethics of research involving humans.

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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