An unusual Case of Acute Obstructive Kidney Failure on Renal Transplant Complicating a Pulmonary COVID-19 Infection

ABSTRACT

Aims: Kidney transplant patients are particularly at risk of developing dreadful complications due to any infection, given the daily intake of immunosuppressive drugs, Covid- 19 is no exception. However the obstructive cause has never been described to the best of our knowledge

Results: We report the case of a 30 years-old patient, with renal transplant since 2018, who developped a severe pulmonary Covid-19 infection complicated by an acute anuric obstructive kidney failure confirmed by echography showing moderate pyelo-calicielle dilation.

Conclusion: Because kidney transplant have only one functioning kidney, and are under immunosuppressive therapy, the incidence and severity of acute kidney injury are higher in these settings with a major risk of losing the precious graft.

Keywords: Acute kidney injury; obstructive; COVID-19, infection.

1. INTRODUCTION

Several studies have reported that “kidney damage is extremely common in patients with COVID-19, Kidney transplant patients are particularly at risk of developing dreadful complications given the daily intake of immunosuppressive drugs. This damage can present in the form of acute kidney injury, hematuria and/or proteinuria. However the obstructive cause has never been described at our knowledge” [1,2]. “The kidney damage is associated with the occurrence of major complications, including respiratory failure, the need for invasive mechanical ventilation and death, regardless of comorbidities and other risk factors” [3-6].

2. PRESENTATION OF CASE

We report the case of a 30 years-old, with renal transplant since 2018, who developed a pulmonary infection due to Covid-19 during a journey in Morocco. She was initially admitted to the medical intensive care unit of CHU IBN ROCHD of Casablanca, in January 2021, and then transferred to the nephrology unit after the negativation of COVID19’s PCR.

The lung infection started with the appearance of a cough and rapidly worsened with fever, which led the patient to present to the emergency. The positivity of the Covid-19’s PCR confirmed the diagnosis and a CT thoracic scan estimated the lung damage at 10%. The patient was then transferred to the medical intensive care unit because of her history of renal transplantation et the symptomatology complicated by the installation of an acute anuric renal injury with 113mg/L of plasma creatinine for a basal level at 16mg/L which required an hemodialysis session due to hyperkalemia. An echography was conducted and showed a moderate pyelic dilation confirming the obstructive nature of the acute kidney graft injury and for which a change of JJ probe was scheduled but deferred before

the resumption of diuresis at 1500mL/day and improvement of renal function at 17 versus 113 mg/L.

The evolution was also favorable on the pulmonary and infectious level after reduction of immunosuppressive treatment coupled with a low dose of methylprednisolone with clinical and biological improvement.

3. DISCUSSION

Patients under immunosuppressive therapy, such as kidney transplant recipients, were more likely to develop SARS-CoV-2 also known as COVID-19 infection, because of impaired immunity. Moreover, COVID-19 infection increased the incidence of severe acute kidney failure in general population, which was estimated from 0.5 up to 25% by some studies [7,8]. Thus it was no surprise for our patient to be affected by COVID-19, which could endanger the graft.

On the other hand, ureteral obstruction, most likely due to stricture, is known to be the most common urinary complication of kidney transplantation especially within the first year after surgery [9]. This was not the case of our patient who received a kidney graft 3 years before the incident. Moreover, the spontaneous resolution was correlated with the results found in literature, generally manages by radiological intervention or open surgery [10]. The complete remission of the kidney graft function, and the disappearance of the obstruction echographically, where both in favor of the obstructive cause. This event, in the immediate following of a COVID 19 infection, and the spontaneous remission of the obstruction of kidney graft where never described by literature to our knowledge. Its physio-pathological genesis is still not explained.

4. CONCLUSION

Because kidney transplant recipients have only one functioning kidney, and they receive immunosuppressive therapy the incidence and severity of acute kidney injury. However, few studies or cases reported an obstructive event in these circumstances.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

ETHICAL APPROVAL:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

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