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Letter to the Editor

Kidney transplant with refractory hypertension in a case of mid aortic syndrome

Trasplante renal con hipertensión arterial (HTA) refractaria en un caso de síndrome de aorta media (SAM)

Dear Editor,

Mid aortic syndrome (MAS) is a major cause of renovascular hypertension (HTN) in children (26%).[1] It is a rare condition characterised by stenosis of the aorta in its lower thoracic and upper abdominal portions with involvement of the main arteries at that level and their respective ostiums, mainly affecting the renal arteries, with HTN being the cardinal clinical manifestation which is present in 95% of cases.[2–5]

In the general population, it is estimated an incidence of 0.5–2%, and no clear affinity for gender, race or socioeconomic group has been demonstrated.[3]

Through a retrospective review, we report the case of a female kidney transplant patient in the nephrology department of Burgos University Hospital in Spain with HTN refractory to optimal medical treatment and diagnosed with MAS, who had to be started on haemodialysis due to progressive deterioration in kidney function. A right axillobifemoral to common femoral bypass was performed.

This was a 20-year-old woman with end-stage renal disease secondary to MAS and bilateral renal stenosis with severe HTN who required bilateral nephrectomy in June 2011 and received a living-donor kidney transplant on 19 March 2014. Since then, her baseline creatinine had been around 1.5–2 mg/dl, along with urinary protein in the range 100–160 mg/24 h.

The patient had difficult-to-control HTN with organic repercussions (mild hypertensive retinopathy and ventricular hypertrophy), which required several hospital admissions for hypertensive crises in the context of non-adherence to treatment.

On 31 October 2019, she was admitted to de hospital due to severe dyspnoea and chest pain associated with an episode of decompensated heart failure due to poorly controlled HTN (227/71 mmHg) and deterioration in kidney function, with creatinine of 2.02 mg/dl and urea 109 mg/dl. Urinary biochemistry showed creatinine 38 mg/dl, urea 7 g/l, sodium 89 mEq/l, potassium 16 mEq/l and chloride 61 mEq/l (fractional excretion of sodium of 3.4% and fractional excretion of urea of 33.8%).

Initial tests included ultrasound of the urinary system and renal Doppler ultrasound, which showed a transplanted kidney in the right iliac fossa of normal size, morphology and location with preservation of cortical thickness and adequate corticomedullary differentiation. The renal artery appeared to be of normal lumen with peak systolic velocity at the high limit of normal. The intrarenal arteries had a resistance index at the upper limit of normal (around 0.7) and a wave morphology with virtually no diastole, along with an increased acceleration time (possible tardus-parvus). Transthoracic ultrasound showed severe concentric left ventricular hypertrophy with an obstructive gradient, a severely dilated left atrium along with very high filling pressures and an estimated pulmonary systolic pressure (PSP) of 59 mmHg.

Despite the medical interventions carried out in hospital, the patient's renal function progressively deteriorated, with anuria in conjunction with data of water overload from a clinical perspective (cumulative salt/water balance of 9–10 kg) and radiological perspective, while being refractory to the intensive medical treatment, with creatinine reaching 8.87 mg/dl and urea 383 mg/dl. Due to all of the above factors, she was started on haemodialysis on 26 November 2019.

After analysing several possibilities, we contacted the Angiology and Vascular Surgery department to jointly assess the case, deciding to perform a right axillobifemoral to common femoral bypass with an 8-mm ringed Dacron-Silver prosthesis on 3 February 2020.

At 48 h post-intervention, the patient's creatinine was 2.59 mg/dl and urea 199 mg/dl. In line with her clinical recovery, the patient had optimal control of blood pressure with

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prescribed antihypertensive medication, along with a reversal of cardiomegaly demonstrated by follow-up chest x-ray.

In view of the patient's progressive recovery of kidney function along with increased diuresis, haemodialysis sessions were discontinued on 11 February 2020, with a creatinine level of 2.27 mg/dl. After that, her kidney function showed progressive improvement until reaching a creatinine level of 1.14 mg/dl without having required admission for exacerbations and/or complications. However, the patient sadly died in March 2021 due to a complicated respiratory infection.

We believe that thanks to the retrograde flow obtained towards the abdominal aorta and its branches (because the blood flow of the latter has lower pressure than that coming from the axillobifemoral bypass), renal function progressively improved, concomitantly resulting in clinical improvement and optimal control of blood pressure. Kidney function was preserved above 1.1 mg/dl despite the fact that patients with chronic kidney disease who have required dialysis for more than 90 days have little chance of recovering sufficient kidney function to be able to do without it.

In conclusion, this article reports a case of MAS as a cause of renovascular hypertension, with a clinical presentation that posed a challenge to its therapeutic management. The associated HTN was difficult to treat and required multiple therapeutic interventions, but which were ultimately successful.

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De novo IgA nephropathy in a kidney transplant recipient after SARS-CoV-2 vaccination

IgA de novo en trasplante renal tras vacunación frente a SARS-CoV-2

Dear Editor,

We present the case of a 30-year-old male diagnosed with membranoproliferative glomerulonephritis type 1 in 2011 and progression to end-stage chronic kidney disease. In 2019, he received a kidney transplant (KT), maintaining stable kidney function ever since, with baseline serum creatinine (sCr) around 1.1 mg/dl and albumin/creatinine ratio (ACR) in urine of approximately 450 mg/g, without any other urinary sediment abnormalities. Immunosuppressive treatment included tacrolimus, mycophenolate mofetil and steroids. In April 2021, due to the development of condyloma acuminata, mycophenolate was replaced by everolimus. On 13/07/2021, he received the first dose of the Pfizer-BioNTech COVID-19 vaccine, with no documented adverse effects. Thirteen days later, in routine blood tests, a deterioration of renal function was found, with sCr 1.5 mg/dl. On 03/08/2021, he received the second dose and the deterioration in renal function progressed to sCr 2.4 mg/dl.

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