

Bariatric surgery in end-stage kidney disease—removing a barrier to transplantation

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Kidney transplantation (KT) allows better survival, improved quality of life and lower costs than dialysis for patients with end-stage kidney disease (ESKD).¹ Assessment of suitability for KT involves synthesis of physical, psychological and behavioural issues. Obesity is viewed as a contraindication to KT, with a cut-off body mass index (BMI) of 40kg/m² being used for entry onto the national New Zealand Kidney Allocation Scheme (NZKAS) and many renal transplant centres.¹ Elevated BMI is associated with increased post-operative complications such as delayed graft function, wound infection, wound dehiscence and prolonged hospital stay.¹ Dietary education and intervention are resource intensive and often ineffective for lowering BMI in patients on renal replacement therapy.² Paradoxically, patients with an elevated BMI on haemodialysis have better outcomes than those with a lower BMI;³ however, KT provides clear survival benefit over dialysis even in obese patients.⁴

Here we described the case of a patient on dialysis who underwent bariatric surgery allowing progression to KT.

Case report

A 43-year-old Tongan lady presented to hospital in September 2009 with coughing, dyspnoea and oedema for 1 month. Her BMI was 46kg/m² (height 1.59m, weight 117kg). She was found to have new kidney impairment with a serum creatinine of 1060µmol/L, potassium of 5.3mmol/L, haemoglobin of 84g/L, haematuria, proteinuria and normal-sized kidneys on ultrasound. Her creatinine was 115µmol/L in November 2008. An autoimmune screen and viral serology were normal. Renal biopsy showed an immune-complex glomerulonephritis with interstitial nephritis and 30% tubulointerstitial scarring. She was commenced on emergent dialysis and corticosteroids; however, she did not recover

kidney function, remaining dialysis-dependent. She progressed to home haemodialysis 4 days a week. Despite regular specialist dietitian input, her BMI never fell to less than 40kg/m² (weight range 114kg–123kg). She was referred to the bariatric service in December 2020. She had gastric sleeve surgery in June 2021, which was uncomplicated. By September 2022, her BMI fell to 34kg/m² (weight 87.3kg) and she was accepted onto the NZKAS. Between referral and listing she had intensive input from the bariatric and renal service, with over 75 visits. She received a deceased donor KT in October 2022 and remains free of dialysis, on immunosuppression, with a creatinine of 133µmol/L in October 2023 (weight 87.6kg).

Discussion

Obesity is a worldwide epidemic. The Aotearoa New Zealand Health Survey 2020/2021 identified that over one in three adults were obese, with prevalence more common in Pacific peoples (71.3%), Māori (50.8%) and European (31.9%) than in Asian (18.5%) adults.⁵ This represents a dramatic increase over the last 15 years, when just over a quarter of adults were obese (26.5% 2006/2007 to 34.3% 2019/2020). Obesity is common in patients on dialysis and is one of the most common reasons for not entering onto the kidney transplant list. In our district, we currently have 61 patients active on the NZKAS with 41 other patients having a raised BMI preventing listing. A systematic review of literature has demonstrated that bariatric surgery in ESKD patients has similar post-operative weight loss to that of the general population;⁶ however, it is associated with increased peri-operative mortality and cardiac events.⁷ The annual cost of dialysis is estimated at NZ\$115,712. Sleeve gastrectomy and related follow-ups are estimated to cost \$23,000, while the first year's costs of transplantation is \$107,361 but then reduces to \$10,000–\$15,000 annually from the

second year onwards.⁸ Thus, within 2 years there are economic benefits from bariatric surgery facilitating renal transplantation. Overseas, bariatric surgery for patients with ESKD is steadily increasing;⁹ however, an unanswered question remains whether the risk of bariatric surgery in patients with ESKD outweighs the gain, with the potential for kidney transplantation.

In Aotearoa New Zealand, there is a steady increase in privately and publicly funded

bariatric surgery.¹⁰ One issue is whether patients with fewer comorbidities should be prioritised for surgery over higher risk patients, such as those with ESKD;¹⁰ however, this may still disadvantage patients who can gain significant improvement in quality of life and quantity of life. Here we present a patient with ESKD on dialysis who had bariatric surgery and highlight that access to this important procedure may remove a further barrier and allow successful kidney transplantation.

COMPETING INTERESTS

There are no conflicts of interest in the submission of this manuscript.

Verbal consent was obtained from the patient for presentation of this case.

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