

UK Living Kidney Donation Network Meeting
Wednesday 10th May 2023

Clinical Session: Donor Assessment
- the grey areas

- Donor BMI
- Donor GFR/Split function (pre/post cr.)
- Donor Hypertension/end organ damage

Case 2 – Expert commentators: Graham Lipkin, Ioan Prata

Potential recipient

- Age 56 female
- RRT since Jan 2022 having presented with ESKD and hypertension
- Height 1.50m, Weight 62.0kg

Potential donor

- Age 32 male (son of recipient)
- HLA 0,0,0 A,B,DR mismatch
- Split function 39% left 61% right, with corrected GFR 106 mL/min/1.73m² (uncorrected GFR 105 mL/min).
- Height 1.77m, Weight 58.5kg
- CT renal scan (no previous studies). A 37 mm hypodense lesion at the upper pole of the left kidney with perceptible rim enhancement. This likely represents a small amount of thin normal cortex therefore Bosniak 1. Normal parenchymal appearances of both kidneys (R = 10.5 cm, L =10.3 cm). Both the left and right kidney are supplied by a single renal artery and right drains via a single renal vein. The left renal vein has a small retro-aortic branch. Normal renal collecting system seen proximally. No other abdominal abnormalities.

- CXR normal
- No renal asymmetry - relevance of cyst to GFR measurement?
 - The gamma radiation would penetrate the cyst with no significant attenuation. It is a simple cyst, without dense content that could absorb the radiation to such an extent to interfere with the result.
 - To prevent things like attenuation related to the position of the kidney (deeper or more superficial) the split function is calculated by having a geometrical mean of the counts obtained in anterior and posterior projection.
 - DMSA is a cortical tracer, it would bind to the renal cortex. The area with the cyst is lacking functional cortex therefore the images obtained are a true reflection of the anatomical findings and does not represent a lack of counts due to attenuation by the cyst.
- The results therefore represent an accurate assessment of the renal cortex and renal function.

Question:

Can we proceed to living kidney donation for a 32 year old gentleman with a left Bosniak 1 cyst and a left:right split function of 39:61%?