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 3 – Expert commentator:
Neil Sheerin

Potential recipient

- Age 57 male
- Haemodialysis commenced the previous year
- Light chain deposit disease (LCDD), National Amyloid Centre involvement, previous VCD chemotherapy, LCDD in remission.

Potential donor

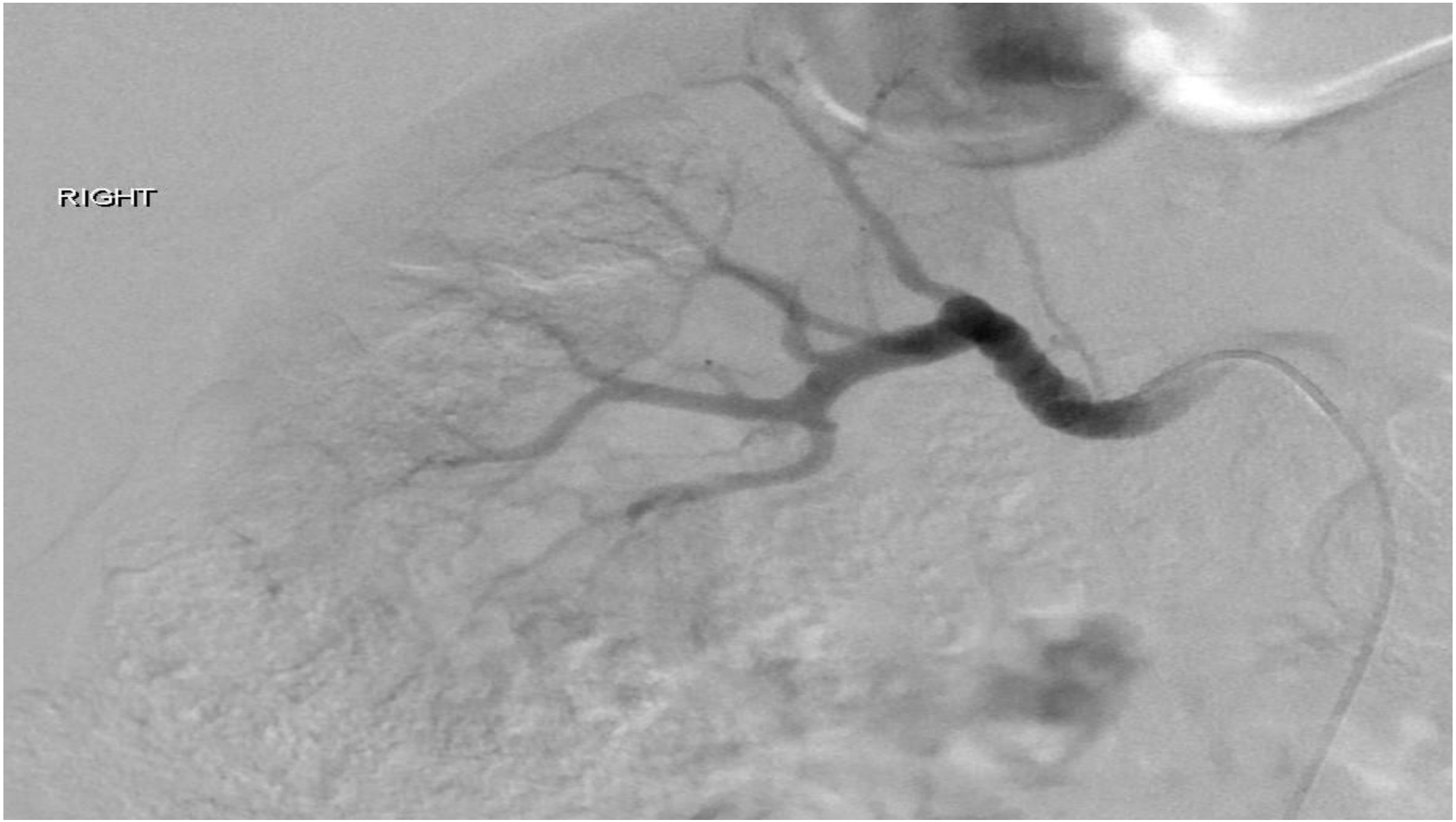
- Age 55-year female (wife of potential recipient)
- Mild hypertension which improved with BMI reduction
- HLA 2,1,2 A,B,DR mismatch
- Consideration of UK Living Kidney Donor Sharing Scheme

CT angiogram

- Bilateral single renal arteries.
- There is irregularity of the mid and distal right renal artery raising the suspicion of fibromuscular dysplasia (FMD).
- Patent left renal artery proximal and mid. There is a kink in distal renal artery with a focal change in calibre. This may represent further FMD but equally could be due to a tortuous course.
- Both kidneys 10cm in length.

Bilateral renal angiogram

- Right side: The main right renal artery is irregular in contour for a segment prior to its branching in the renal hilum. This is comprised of bands of concentric, smooth narrowing of the artery, in a pattern suggesting fibromuscular disease. The intrarenal branch vessels look normal and there is no evidence of aneurysm formation.
- Left side: There is evidence of irregularity of the left renal artery. This is less marked than on the right. However, there is still an area of density change traversing the left renal artery prior to its first branch, and immediately after its first branch. These areas also show slight irregularity on the recent CT angiogram, corroborating these findings. Again, this looks like fibromuscular disease.
- Conclusion: There is bilateral renovascular disease, and the configuration suggests fibromuscular dysplasia. The appearances are more marked on the right.


RIGHT

***Question*:**

Can we proceed to living kidney donation for a 55-year-old lady with fibromuscular dysplasia in the absence of hypertension?

Case 3

1. What about the fibromuscular dysplasia?
    - Common 2-6% of donors
    - Relatively little known about the natural history of *silent* FMD

KDIGO 2017

A donor candidate with atherosclerotic renal artery disease or fibromuscular dysplasia involving the orifices of both renal arteries should not donate

Not graded

- 53 years old
- Good renal function
- No renal asymmetry
- No significant hypertension
- ‘Probably’ a non progressive disease

Case 3

Renal and Lung Living Donor Evaluation (RELIVE) study

- 113 donors with FMD
- Extent of FMD not recorded
- Mean follow up 15.5 years

	FMD	Control
Hypertension	22.2%	19.8%
CKD (eGFR <60)*	69.4%	55.4%
Proteinuria*	20.6%	13.7%
Cardiovascular disease	13.3%	12.9%

*No difference in a propensity matched cohort

Adrogue et al NDT 2021;36;1538

Donate with counselling about possible increased risk of hypertension

Case 3

Should she have imaging of other vessels?

Which kidney would you remove?

- Right kidney more severely affected (typical of FMD)

Will the recipient / recipient centre accept the kidney?

- 36 donor recipient pairs
- 26 unilateral, 10 bilateral disease
- 28 mild, 8 moderate disease
- 3 year graft survival 89%
- No kidney lost due a complication relating to FMD
- 9 recipients required 3 or more antihypertensives

Kolettis et al Urology 2004;63;656

Case 3

1. What do we tell the donor about the risk of recurrence?
    1. Light chain deposition disease
    2. Chemotherapy only
    3. Progressed to ESKD and is now on dialysis
    4. Can we be confident about remission?
2. Pre-existing hypertension
    1. Mild
    2. Improved with weight loss
    3. Will weight loss be maintained after donation?
    4. BP likely to increase after donation (7mm Hg rise in systolic BP)

Case 3

- No other suitable donors
- Mild FMD disease
- No or mild hypertension
- Few or no other cardiovascular risks
- Unilateral (or predominantly unilateral) FMD
- No or mild FMD in other arterial beds
- No dissection or aneurysmal disease
- No pregnancy considerations
- Inclusion in a registry

Chrysochou et al NDT 2021;36;1365

Thank you, to:

- Frank Dor, Consultant Surgeon, Imperial College, London
- Adam Barlow, Consultant Surgeon, Leeds
- Graham Lipkin, Consultant Nephrologist, Birmingham
- Ioan Prata, Consultant Nuclear Medicine Physician, Bradford
- Neil Sheerin, Consultant Nephrologist, Newcastle