Redefining expanded criteria donor kidneys in the developing world

Sir,

A kidney from an expanded criteria donor (ECD) is a kidney from any brain dead donor aged 60 years or older, or from a donor aged 50-59 years with two of the following: Hypertension, terminal serum creatinine greater than 1.5 mg/dL or death from a cerebrovascular accident (CVA).[1] These kidneys are of poorer quality, are expected to show diminished post-transplant function and have a higher rate of graft loss.[2] This definition is perhaps more applicable in the West, but there are major concerns with its application in the developing world because of special circumstances. In the Middle East, the recorded age in the local population can be very unreliable because of paucity of registration facilities in the past, and for expatriate workers specifically, the age can also be inaccurate because people report younger ages to compete for jobs. Most unskilled expatriate workers do not have regular medical check-ups and an accurate history of hypertension or diabetes would not be available or reliable (if they became deceased donors) because of the absence of adequate medical records. Terminal serum creatinine in any deceased donor is also subjective and is dependent on the type of center where medical care is being delivered, and in the absence of proper fluid management, the serum creatinine can easily rise above 1.5 mg/dL. We would like to present a recent example to substantiate the above. We recently had an expatriate deceased donor from India whose age was reported as 37 with no history of hypertension, the terminal creatinine was 1.6 mg/dL and cause of death was a CVA. This was considered a standard criteria donor (SCD) kidney, primarily because of the donor's age and a negative history of hypertension, and therefore pre-implantation biopsy was not interpreted at the time. With a cold ischemia of 6 h and anastomosis time of 34 min, the kidney did not perfuse well and remained dusky and soft, pulsations in the renal artery and its branches were visible along with positive Doppler signal. However, no Doppler signal was detected over the kidney. After revision of the arterial anastomosis, the kidney became pink but turned dusky and soft within 2-3 min, with positive Doppler signal in all extrarenal arteries. A formal Doppler study next morning reported the absence of diastolic flow suggestive of renal vein thrombosis. At re-exploration, the renal vein was patent, the kidney was still dusky and soft and another biopsy was taken. This showed widespread marked arterial disease (arrows) with associated chronic ischemic glomerular and background tubulointerstitial damage [Figure 1] and helped in explaining the interpretation of renal vein thrombosis on Doppler and the behavior of this allograft after reperfusion.

In retrospect, the only objective parameter in this case was the CVA, which pointed to significant arterial disease that was also mirrored in the kidney. Goplani *et al.*, carry out a wedge biopsy in all donors over 60 with a history of hypertension, diabetes and CVA as the cause of death to determine whether the kidney will be used or not.[3] They do not mention their approach in donors who are less than 60. We did not consider a biopsy because the donor was 37-year-old and had no history of either hypertension or diabetes. The only red flag was the CVA but this was considered insignificant in the absence of other risk factors. Swami *et al.*, used the conventional definition for ECD kidneys[1] and no mention is made of a biopsy.[4]

It may now be time, at least in the developing world, to redefine ECD kidneys. With the prevailing extent of inaccuracy in history and medical records in the expatriate population in the developing world, transplant programs in the region would be advised to get a pre-implantation interpretation of a tissue biopsy whenever 1) the age in older donors is unreliable, 2) a detailed history is not available, or 3) CVA is the cause of death, to safeguard our recipients.

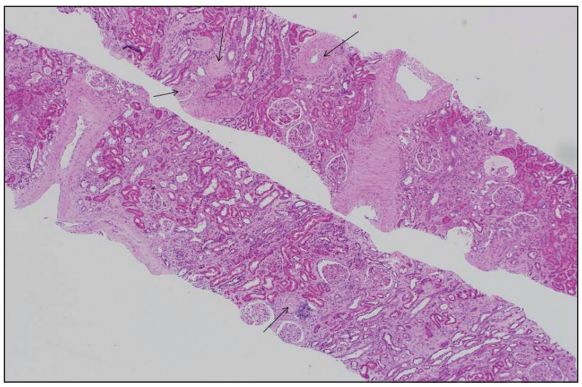

Figure 1: A kidney biopsy showing marked arterial disease (arrows) with associated chronic ischemic glomerular and background tubulointerstitial damage

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