Morphology of coronary atherosclerotic lesions in patients with end-stage renal failure

Sir,

The study by Schwarz et al. [1] provides valuable observations concerning the occurrence of calcification in the coronary arteries of patients with end-stage renal failure. However, although the authors described increased intimal calcification and medial thickness in end-stage renal failure, they did not comment on the presence or absence of medial calcification. This is an important omission in view of the rising use of coronary calcification measurement by electron beam CT (EBCT) in the uraemic population [2].

Intimal calcification occurs only within atherosclerotic plaques [3,4]. In contrast medial calcification occurs independently of intimal calcification and atherosclerosis [3,4]. It commonly occurs in patients with end-stage renal failure [5] making it difficult to palpate the pulses and sometimes causing problems with vascular shunts. In the non-uraemic population, medial coronary artery calcification appears to be rare and thus measurements of coronary calcification by EBCT have been assumed to be a measure of intimal calcification and atherosclerosis. However, this may not be the case in end-stage renal failure if there is a significant amount of medial calcification present. It is therefore critical to know the incidence of medial coronary artery calcification in end-stage renal failure as it may lead to overestimation of EBCT calcium scores. The recent surge of interest in EBCT calcium measurements to predict and monitor the presence and progression of coronary atherosclerosis [6,7] would make this information particularly valuable at this time.

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Reply

Sir,

We are glad and grateful that Dr Farzaneh-Far draws attention to the high prevalence of arterial calcifications in patients with renal failure. The important issue of tissue calcification and in particular arterial calcification was first described by Ibels and coworkers (as stated by Dr Farzaneh-Far) and was later on confirmed by many clinical and autotopical studies. We agree that media calcification is an important issue in particular with respect to the recent technical developments which allow easy detection of these lesions.

We emphasize, however, that the pathogenesis of calcification of the media of elastic arteries is completely different from patchy calcification of atherosclerotic plaques of the intima (which we reported in our study). It was not the aim of our study to investigate media calcification of coronary arteries (which would have required a completely different approach). Nevertheless, the coronary vessels we investigated in our study did not show any calcification of the arterial media.

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6. Wexler L. Coronary arte...