Reply to the Letter to the Editor

We thank Dr Chong [1] for his comments on our recent article [2] and congratulate its group for the nice studies on the effect of radial artery harvesting on the forearm vasculature and haemodynamics.

Removal of the RA anatomically reduces to half the forearm vasculature and the fact that overall forearm flow remains constant is related to the development of ulnar artery collateral flow, as expressed by the increase in systolic velocity in this artery that ourselves and Dr Chong’s group have already described.

It is this increase in ulnar flow that could (at least theoretically) have contributed to the development of the ulnar artery atherosclerosis that we have found at long-term follow-up.

However, Dr Chong is not correct when stating that no flow limiting lesions were reported in our study, as overt ulnar atherosclerosis was instead detected in a significant proportion of cases in the operated arm.

We congratulate Azorin and associates [1] on their report on successful clinical application of previous tracheal prosthesis research [2]. However, the technicalities of the anastomosis and the geometric relation of the graft edges to the host trachea did not get the attention they deserve. Working on similar problems we had some peculiar observations [3] difficult to explain. The way to a successful tracheal reconstruction is a narrow course between the Scylla of infection and Charybdis with overgrowth of granulation tissue. In four groups with five dogs in each 6 cm segments of trachea were resected and replaced with ringed vascular prosthesis. In Group I end-to-end anastomoses were sewn. In Group II telescopic anastomosis was applied in external position of the perforated prosthesis to facilitate neoepithelialisation. In Group III the externally telescoped prosthesis had a solid wall. In Group IV the prosthesis was telescoped internally. Absolute survivals were measured to evaluate the viability of the best method. There were no survivors over 3 weeks in Group I. An average survival of 40.6 days was achieved in Group II. The average survival was 68.4 days (49–80) when externally telescoped but not perforated grafts were applied (Group III). Three hundred and sixty-day average survival was observed in Group IV, when endoluminally telescoped prosthesis was applied. Complete neoeptehelialisation was revealed without ciliary function in this latter group where the absolute survivals were 127, 135, 190 and 257 days. The fifth dog in this group was living for 971 days. The influence of geometric relation of the host trachea to the neotrachea on survival seemed to be disproportional. The experiments were repeated on rabbits too. The length of survival differed from 13 to 89 days (mean 48 days), with significantly longest survivals in Group IV (mean 77.8 days). Granulation tissue formation caused narrowing of the lumen in a different degree in 18/20 cases. Three mild narrowings were observed in Group IV. The most severe cases developed in Group I with external telescopic anastomosis. In Groups II and III progressive granulation tissue formation was observed at the anastomotic sites. Telescopic anastomosis geometry influences the tendency for granulation tissue overgrowth. Our findings related to a rarely investigated detail contradict to the expectations as endoluminal position of the edges of the neotrachea proved to be a key factor in better outcome. Out of Belsey’s original criteria [4] creation and maintenance of the patency of the (neo)windpipe have priority over continuous internal lining of respiratory mucosa. There is another indirect promising feature of the French team’s work. They previously reported development of cartilaginous tissue in the neotrachea [2] a strange phenomenon, observed and documented by us in dogs, too. This is another observation we can build on in the future clinical application.