



Helen Matthews has completed this personal reflection on **12/11/2018**

Paper: Autumn 2018 CPD questions

Personal Reflection:

Spiral Laminar Flow : a survey of a 3 dimensional arterial flow pattern in a group of volunteers.

It has been suggested that the predominant arterial flow pattern is spiral laminar and this study aimed to identify whether this is so in a cohort of volunteers.

The arterial sites examined were the carotids, femorals and infra-renal aorta.

The survey did prove that spiral laminar flow was predominant and raises questions suggesting the need to further study the form and function of the left ventricle, the geometry of the arterial system and the function of the arterial wall.

Right sided arterial flow tended to be clockwise and left sided anti-clockwise.

CT Angio vs Duplex in detecting stenosis of AVFs and grafts for renal access in dysfunctional haemodialysis.

Haemodialysis in ESKD requires a functioning access but this has a high risk of obstruction by thrombosis due to stenosis which affect patency.

The study assessed the accuracy in detecting and grading stenosis in AVF and AVGs between MS-CTA and CDUS and concluded there was no statistically significant difference mean stenosis %, mean length, segment or narrowest part as measured between the 2 modalities.

The main limitation of CDUS is in assessing central veins due to the overlying sternum which ultrasound cannot penetrate.

Otherwise, in experienced, CDUS is readily available, inexpensive and non-invasive with no radiation exposure or use of contrast media and gives haemodynamic information of an AVF with flow volume measurements.

MS-CTA is minimally invasive, clinically feasible for evaluation of the complete vascular tree for failing AVFs and in demonstrating central vein lesions or obstruction.

3D CTA can offer freely rotated projections in addition.

However, it is contra-indicated in pregnancy or if subjects have allergy to contrast agents.