THE SOCIETY FOR VASCULAR TECHNOLOGY OF GREAT BRITAIN AND IRELAND

Minta Palmer has completed this personal reflection on **27/03/2023**

Paper: Autumn 2022 CPD Questions

Personal Reflection:

Description of the Learning: SVT Autumn 2022 CPD Questions - Bicycle exercise ankle brachial index recovery time as a novel metric for evaluating the hemodynamic significance of external iliac endofibrosis in competitive cyclists

Analysis: EIAE affects approximately <10-20% of high performance cyclists, causing vascular claudication. Current diagnosis and follow up rely on exercise ABPI and cross-sectional imaging, however many patients show minimal improvement in follow up exercise ABI despite symptom improvement after repair. This was a single centre retrospective study to test the accuracy of Bicycle exercise ABI recovery time, to determine if this technique can demonstrate improved postoperative haemodynamic improvement.

Conclusion: Patients attended postoperative clinical appointments, and were exercised on their bicycles to a maximum threshold. Post exercise ABI's were recorded at 1 minute intervals for 4 minutes, then at 2 minute intervals until ABI returned to normal. A comparison of the BARTs before and after surgical treatment of EIAE provided an additional measure of postoperative hemodynamic improvement, which was likely more sensitive than exercise ABI alone.

Benefit to Current Practice: None - we currently do not see or treat any patients with EIAE.

Benefit to Service User: None at our site, however this would be a very useful technique for those sites who do treat EIAE, as it would help determine how successful the surgery was.

Description of the Learning: SVT Autumn 2022 CPD Questions - The reliability of duplex ultrasound in diagnosing popliteal artery entrapment syndrome: An observational pilot study

Analysis: Popliteal artery entrapment is a vascular compression affecting young people. PAES can cause claudication and lead to distal blood flow reduction, and can present bilaterally. Diagnosis can prove difficult. This was a prospective observation study of 23 limbs to test whether ultrasound is sensitive enough to accurately diagnose PAES.

Conclusion: 23 patients were scanned in 3 positions: supine, prone with active plantarflexion, and standing on toes. Above and below knee popliteal artery diameter and velocity measurements were taken in all positions, as well as distal ATA and PTA velocity measurements. A significant difference was noted in the distal popliteal diameter, and velocity measurements when the patients were standing upright on their toes. As these scans were performed on asymptomatic patients who had no history of PAES, the authors suggest that asymptomatic patients may have a compression during active plantarflexion due to physiological phenomena, thus providing a false positive result. Therefore ultrasound cannot determine the asymptomatic from symptomatic. Duplex ultrasound imaging using active plantar

flexion and erect on top of toes may not be enough to give an appropriate, accurate diagnosis alone, and further imaging is highly recommended.

Benefit to Current Practice: We currently only scan a handful of PAES patients, and the diagnosis is quite difficult. We use a multidisciplinary approach to diagnose, with ultrasound as a first step. Any patient who tests positive on ultrasound then goes on to have cross-sectional imaging to confirm.

Benefit to Service User: Unfortunately, ultrasound alone cannot be use to detect PAES, which means the patient has to return for several visits, as well as waiting for MDT discussion. The patient would benefit from a more streamlined service.