THE SOCIETY FOR
VASCULAR TECHNOLOGY OF
GREAT BRITAIN AND IRELAND

Annual Scientific Meeting

Wednesday 1st December 2021
&
Thursday 2nd December 2021

The Future of Vascular Science

Presidents Welcome

Hello and welcome to the Vascular Societies Annual Scientific meeting 2021.

Following a very difficult year its great to be able to finally log out of zoom, take off the tracksuit bottoms and socialise once again as we take our steps back into normality. I hope you all enjoy what we have on offer for you in what has been another difficult year to organise for which I am very grateful to Steve Rogers (conference secretary) for doing a fantastic job.

The SVT programme starts on Wednesday morning with a research skills and methods workshop put together by the SVT research committee. This workshop is designed to give SVT members the skills needed to begin planning their own research studies which is a key requirement for STP equivalence. Following the research theme, the afternoons keynote speaker is Dr Beth Harris, (Senior Programme Manager, National Institute for Health Research (NIHR) talking about careers in research and how the NIHR can help. Wednesday afternoons session is composed of research proposals from STP students followed by a joint session with VASBI on endovascular AVF. The first day ends with the annual heads of service meeting before a well-deserved beverage (or two) at the SVT drinks reception at Bar Manahatta.

Day two starts with a session of oral presentations of scientific abstracts, research proposals and case studies. The afternoon then begins with the much anticipated ‘great debate’ where we discuss the question ‘Should vascular ultrasound only be performed by experienced vascular scientists?’ The afternoon continues with talks from Professor Justin Mason (Prof Vascular Rheumatology, Imperial College London) talking about the management of large vessel vasculitis and Mr Neil Hopper (Consultant Vascular Surgeon, Royal Cornwall NHS Trust) talking about his remarkable career in vascular surgery. The final presentation of the conference is the Jackie Walton lecture which this year is by Mr Gurdeep Jandu, (Interventional Vascular Scientist, My Vein Clinic) who is talking about the role of the Interventional Vascular Scientist.

The conference comes to a close with the SVT AGM followed by the awards of the best research proposal, completed study and scientific paper or case study plus presentation of the Ann Donald Award and Honorary membership.

We hope you find this year’s programme enjoyable and we look forward to seeing you in person.

Lee Smith
President SVT 2019-2021

Wednesday 1st December Programme

REGISTRATION OPENS

Room – Charter 3

09:00 - 09:05 WELCOME
Mr Lee Smith, SVT President

09:00 - 12:00 RESEARCH SKILLS AND METHODS WORKSHOP
A live data exercise supported by theory to support members in undertaking their own research. This workshop will provide members with the theoretical knowledge for undertaking STP Equivalence.

12:00 - 13:00 LUNCH AND EXHIBITION
Served in the main Exhibition Hall

13:00 - 13:20 KEYNOTE SPEAKER
Dr Beth Harris, NIHR Senior Programme Manager,
"NIHR funding to develop your research career"

13:25 - 15:00 STP RESEARCH PROPOSALS
The afternoon will be composed of research proposals from STP students and closed with a one-hour joint session with VASBI on endovascular AVF

15:00-15:30 COFFEE BREAK
Served in the main Exhibition Hall

15:30 - 1630 JOINT VASBI-SVTGBI SESSION
"Endovascular AVF and ultrasounds role"
Miss Amy Bolsworth, Vascular Scientist, Barts Health NHS Trust
Dr Ounali Jaffer, Consultant Interventional Radiologist, Barts Health NHS Trust
Dr Zaib Khawaja, Specialty Doctor in Renal Transplant/Dialysis Access, University Hospitals Birmingham

Mr Jon De Siqueia, Deputy Chair, Vascular Access SIG, Vascular Society GB&I
"Defining research priorities in vascular access: a joint VSGBI/JLA PSP"

17:00 - 18:00 SVT HEADS OF SERVICING MEETING
Agenda to be provided by the President

18:00 - 20:00 VASCULAR SOCIETY WELCOME RECEPTION
Drinks served in the Exhibition Hall

19:30 SVT DRINKS RECEPTION – MANAHATTA BAR
188-192 Deansgate, Manchester, M3 3ND.

STUDENT RESEARCH PROPOSALS	
The clinical efficacy of vascular ultrasound screening prior to kidney transplantation.	Mr Louis Alexander, Clinical Scientist, King's College Hospital NHS Foundation Trust
Understanding the impact and associations of Health Literacy with outcomes for Chronic Limb-threatening Ischaemia (CLTI); The HeaLTHI study	Miss Chloe Bishop, Trainee Vascular Scientist, Newcastle upon Tyne Hospitals
A prospective evaluation of the current diagnostic pathway for patients with suspected giant cell arteritis	Miss Sophie Bowen, Trainee Vascular Scientist, University Hospitals Bristol
Transthoracic ultrasound evaluation of Thoracic aortic aneurysms.	Miss Hannah Davey, Trainee Vascular Scientist, University Hospital Southampton NHS FT
A retrospective service evaluation investigating the role of carotid artery screening prior to elective cardiac surgery in reducing perioperative stroke rate.	Miss Shannon Halliwell, Trainee Vascular Scientist, University Hospitals Bristol
A single centre service evaluation examining the effectiveness of contrast enhanced ultrasound compared to computed tomography angiography and duplex ultrasound in the detection of endoleaks post endovascular aneurysm repair.	Mr David Machin, Trainee Vascular Scientist, Gloucestershire Hospitals NHS Foundation Trust
An evaluation of using Ankle-Brachial Pressure Index (ABPI) and Toe-Brachial Index (TBI) as a screening tool post-angioplasty.	Mrs Rebecca Nygaard, Trainee Vascular Scientist, Nottingham University Hospitals NHS Trust
A retrospective study on ultrasound velocity criteria for suspected Popliteal Artery Entrapment Syndrome (PAES)	Miss Abigail Traynor, Trainee Vascular Scientist, Imperial College Healthcare NHS Trust

Thursday 2nd December Programme

REGISTRATION OPENS

Room – Charter 3

09:00 - 09:05 WELCOME
Mr Lee Smith, SVT President

09:00 - 10:30 RECENTLY COMPLETED STUDIES ORAL PRESENTATIONS

10:30-11:00 COFFEE BREAK
Served in the main Exhibition Hall

11:00 – 13:00 SCIENTIFIC AND CASE STUDY PRESENTATIONS

13:00 - 14:00 LUNCH AND EXHIBITION
Served in the main Exhibition Hall

14:00 - 14:44 THE GREAT DEBATE
"Should vascular ultrasound *only* be performed by experienced vascular scientists"
For the motion: Mrs Lynne Macrae, SVT Membership Secretary, **Prof. Alun Davies**, Professor of Vascular Surgery

Against the motion: Dr Kamran Modaresi, SVT Vice President Elect, **Mrs Sophie Renton**, Vascular Society Honorary Secretary, **Mrs Louise Allen**, SVN President

1445 - 1530 KEYNOTE AND INVITED SPEAKERS
Prof. Justin Mason, Professor of Vascular Rheumatology, Imperial Collage London
"Role of MRA and PET, compared with US, in the management of patients with large vessel vasculitis"

Mr Neil Hopper, Consultant Vascular Surgeon, Royal Cornwall NHS FT.
"Personal experience of being a vascular surgeon and a bilateral lower limb amputee. How can my experience help my patients?"

15:30 - 16:00 COFFEE BREAK
Served in the main exhibition hall

16:00 - 1620 JACKIE WALTON LECTURE
Mr Gurdeep Jandu, Interventional Vascular Scientist, My Vein Clinic
"The role of an interventional vascular scientist in venous procedures and my journey so far"

16:20 - 16:30 VENOUS RESEARCH PRIORITIES
Mr Dan Carridice, Chair, Venous SIG, Vascular Society GB&I
"Patient led prioritisation of venous research and national multidisciplinary research collaboration"

16:30 – 17:15 ANNUAL GENERAL MEETING & TRAINEE BREAKOUT SESSION

17:15 – 17:30 ANN DONALD AWARD, PRIZE GIVING & HONORARY MEMBERSHIP

1930-0000 GALA DINNER
Manchester Central Convention Centre

RECENTLY COMPLETED RESEARCH BY NEWLY QUALIFIED CVS	
Retrospective analysis of abdominal aortic aneurysm growth rate in patients undergoing local ultrasound surveillance	Mr Ian Hornby, Junior Vascular Scientist, University Hospitals Bristol
Prospective evaluation of inpatient treatment for lower limb Deep Venous Thrombosis (DVT)	Miss Emily Morgan, Clinical Vascular Scientist, University Hospitals Bristol
The feasibility of assessing Cerebrovascular Reactivity with Carotid Duplex ultrasound (Duplex-CVR)	Dr Osian Llwyd, Clinical Vascular Scientist, Oxford University Hospitals NHS FT
A service evaluation of abdominal aortic aneurysm ultrasound surveillance in a large London teaching hospital	Miss Hannah Lord, Clinical Vascular Scientist, King's College Hospital NHS Foundation Trust
Should the iliac veins and veins below the knee be scanned routinely as part of the protocol in ultrasound scanning for deep vein thrombosis diagnosis?	Mr Amine Turay, Clinical Vascular Scientist, Imperial College Healthcare NHS Trust
SCIENTIFIC AND CASE STUDY PRESENTATIONS	
Case study – Superior Mesenteric Artery (SMA) syndrome	Miss Emily Hillier, Vascular Scientist, King's College Hospital NHS Foundation Trust
Semi-automatic measurement of carotid plaque volume using 3D ultrasound: a potential new clinical tool	Miss Alison Phair, PhD Student, University of Manchester
Persistent Sciatic Artery	Mrs Nicolette Kelly, Vascular Scientist, Worcestershire Acute NHS Trust
Popliteal Artery Entrapment Syndrome – Using Ultrasound to Determine What is Normal vs Pathogenic.	Dr David Barrett, Trainee Vascular Scientist, Manchester University NHS Foundation Trust
Case study - Transient Perivascular Inflammation of the Carotid artery (TIPIC) syndrome	Ms Helen Dixon, Senior AVS, King's College Hospital NHS Foundation Trust
Measuring carotid plaque content with grey-scale median by 3D ultrasound	Miss Alison Phair, PhD Student, University of Manchester
Carotid Web; Missed on Duplex	Dr Nazia Saeed, Senior AVS, London North West University Healthcare NHS Trust

Trainee Breakout Programme

Thursday 2nd December
Room – Exchange 10

1630-1645 REVIEW OF THE SVT TRAINING PATHWAY
Review of the process of gaining your AVS and maintaining it beyond accreditation (including introduction of CPD and audit)

1645-1700 SURVEY OF TRAINING EXPERIENCES
Interactive session including a PowerPoint to assess the provision of training across centres and to encourage discussion on the experience of trainees

1700-1710 TRAINEE DISCUSSION AND QUESTIONS
Open discussion regarding training and questions to the education team

1710-1715 SIGNPOSTING AND CLOSE
Close of session including contact details for committee and signposts for trainee wellbeing

17:15 Trainees to join main programme in Charter 3 for prize giving

Wednesday 1st December

Room - Charter 3

Research Skills and Methods Workshop

A live data exercise supported by theory to support members in undertaking their own research. This workshop will provide members with the theoretical knowledge for undertaking STP Equivalence.

PRE-COURSE LEARNING – Good Clinical Practice
https://sites.google.com/a/nihr.ac.uk/crn-learn-help/accessing-nihr-learn

Room – Charter 3

09:00 - 09:02 INTRODUCTION BY CHAIRS

09:02 - 1030 ROADMAPS, PITFALLS, PATIENTS AND DATA

- 09:02 - 09:22: **Dr Richard Simpson**, Principle Vascular Scientist – Nottingham NHS Foundation Trust
  "A roadmap to research"
- 09:22 – 09:42: **Prof. Cliona Kirwan**, Royal Collage of Surgeons Professor of Clinical Trials, North West Surgical Trials Centre and The University of Manchester
  "Levels of Evidence, Pitfalls of Research and Patient and Participant Involvement"
- 09:42 – 1030: A live data exercise on ABPI vs TBPI vs Duplex. Group work to identify errors and pitfalls to gain experience in working with your data.

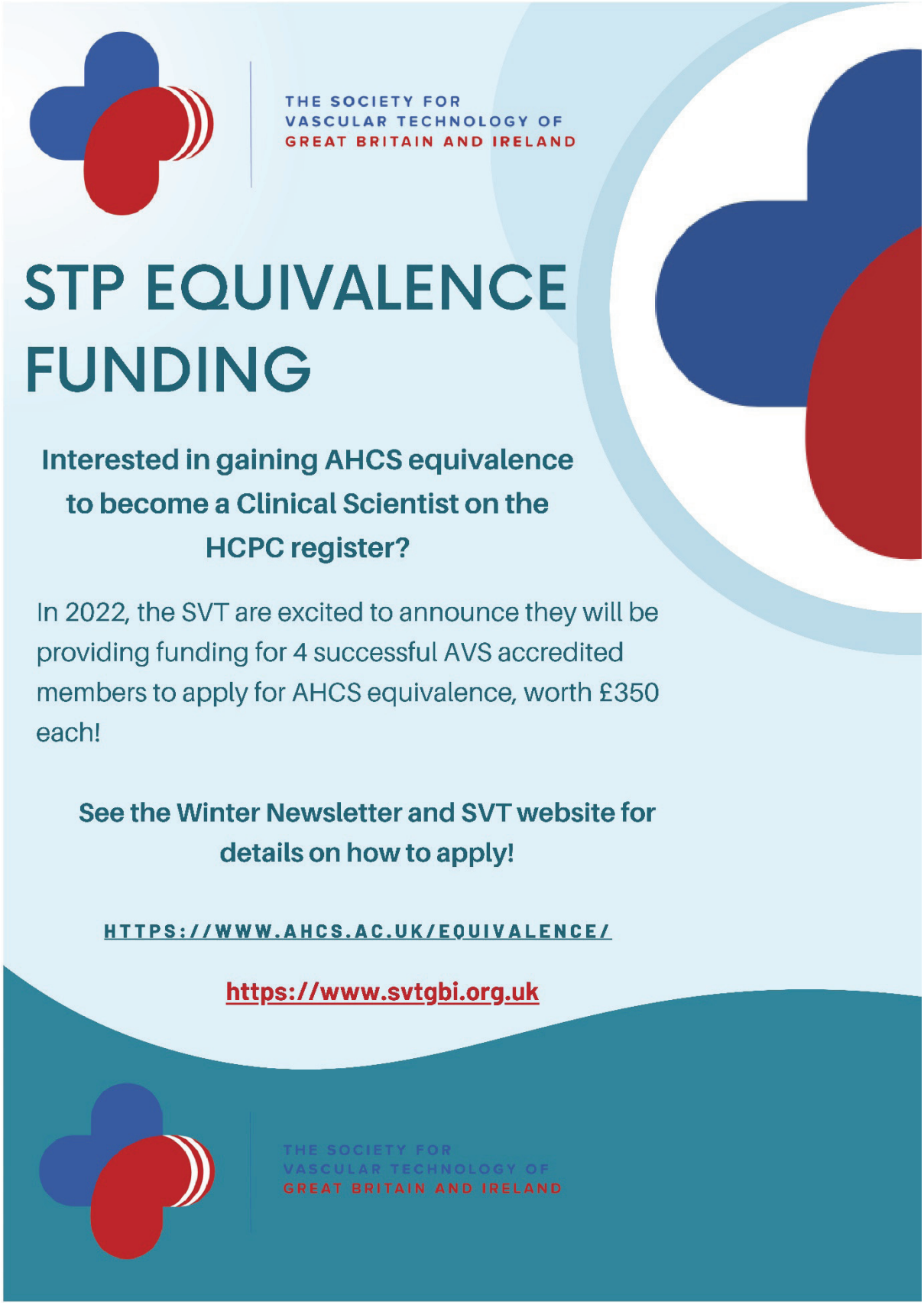
10:30 - 11:00 COFFEE BREAK
Served in the main exhibition hall

11:00 – 12:00 FUNDING, REGULATIONS, APPROVALS, STATISTICS AND DISSEMINATION

- 11:00 – 11:20: **Prof. Matt Bown**, Professor of Vascular Surgery, University of Leicester.
  "Funding and Grants(wo)manship"
- 11:20 – 11:40: **Dr Steven Rogers**, NIHR Clinical Lecturer, University of Manchester.
  "When is research, research and what paperwork do I need?"
- 11:40 – 11:55: **Miss Emma Barrett**, Medical Statistician, Manchester University NHS FT and University of Manchester.
  "Basic Statistics for Vascular Science"
- 11:55: - 12:00: **Ms Yvonne Sensier**, Senior Clinical Vascular Scientist, Leicester Hospitals NHS FT.
  "Reporting and disseminating results"

12:00 SESSION CLOSE

12:00 – 13:00 LUNCH AND EXHIBITION
Served in the main exhibition hall


THE SOCIETY FOR
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STP EQUIVALENCE FUNDING
Interested in gaining AHCS equivalence to become a Clinical Scientist on the HCPC register?
In 2022, the SVT are excited to announce they will be providing funding for 4 successful AVS accredited members to apply for AHCS equivalence, worth £350 each!
See the Winter Newsletter and SVT website for details on how to apply!
HTTPS://WWW.AHCS.AC.UK/EQUIVALENCE/
https://www.svtgbi.org.uk
THE SOCIETY FOR
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Dr Beth Harris

Senior Programme Manager - National Institute of Health and Research Academy

"NIHR Funding to Develop your Research Career"

Biography

Dr Beth Harris is a Senior Programme Manager at the NIHR Academy where she manages the HEE/NIHR ICA Programme. Beth has extensive experiences of the research training awards managed at the NIHR Academy and of supporting prospective applicants to develop competitive applications.

Abstract

Do you want to develop a research career whilst continuing the development of your career as a Vascular Scientist?

Dr Beth Harris from the NIHR Academy will present details of two NIHR Research Training and Career Development Programmes that offer funding to health and care professionals who wish to progress research careers whilst continuing to develop their clinical careers.

The talk will focus on two Programme of funding available to Vascular Scientists:

- NIHR Fellowships Programme
- HEE/NIHR ICA Programme for Health and care professionals (excluding doctors and dentists)

Both programmes are composed of a suite of schemes with support to suit all levels of researcher experience (pre-doctoral, doctoral and post-doctoral level opportunities).

The presentation will provide details of the generous packages of funding available through these Programmes and the amazing opportunities they present to aspiring and developing health researchers, as well as details of how to apply.

Research Proposals by Trainee Vascular Scientists

Mr Louis Alexander

Trainee Vascular Scientist – King's College Hospital NHS Foundation Trust

“The clinical efficacy of vascular ultrasound screening prior to kidney transplantation”

Despite advances in surgical techniques, immunotherapies, and technology, catastrophic vascular associated complications continue to ensue with kidney transplantation (KTx). To reduce complications, pre-operative vascular screening of the carotid and iliac arteries has become routine practice. With an expected rise in demand and a post-pandemic accumulation of vascular scan requests, it is crucial that we maintain efficiency, safeguard patient safety and avoid unnecessary testing.

Pre-KTx vascular screening can be labour-intensive, time-consuming and distressing for patients. Furthermore, there is limited information regarding the effectiveness of vascular screening for KTx candidates. More information is needed to determine if carotid/iliac screening is beneficial and an appropriate use of limited resources.

Thus, this clinical audit will review retrospective data from a pre-KTx screening programme. The audit aims to identify the prevalence of carotid and iliac arterial disease in KTx candidates and determine if scan results had influenced patient outcomes. Audit findings will be used to aid vascular scientists with improving local scanning protocols.

Miss Chloe Bishop

Trainee Vascular Scientist – Newcastle upon Tyne Hospitals NHS FT

"Understanding the impact and associations of Health Literacy with outcomes for Chronic Limb-threatening Ischaemia (CLTI); The HeaLTHI study"

Miss Chloe Bishop[1,2], Miss Rachel Bell[1], Professor Gill Rowlands[3], Mr Sandip Nandhra[1,3]

[1]Northern Vascular Centre, Freeman Hospital, Newcastle upon Tyne, United Kingdom,
[2]Graduate School, Faculty of Medical Science, Newcastle University, Newcastle upon Tyne, United Kingdom,
[3]Population Health Sciences Institute, Newcastle University, Newcastle upon Tyne, United Kingdom

Introduction:
Health Literacy (HL) is the ability to obtain, process and understand health information needed to make health-related decisions. Some healthcare settings have established that inadequate HL is associated with adverse health outcomes. Research suggests that 76.7% of vascular patients have inadequate health literacy. This is concerning given that chronic limb threatening ischaemia (CLTI) can lead to limb-loss. The HeaLTHI study aims to assess the effect of health literacy on CLTI post-intervention outcomes.

Methods:
HeaLTHI is a HRA approved (REC:21/NI/0092) retrospective cross-sectional study evaluating the Health Literacy (by a validated 12-item HLS-EU-Q12 Questionnaire) of 100 participants at 1-year post-surgical intervention for CLTI. Associations with baseline demographics, socio-economic status (using indices of multiple deprivation, IMD), clinical complications, survival and re-interventions will be examined.

Results:
HRA and REC have been granted and data collection is underway. The results are anticipated in advance of the VSGBI ASM.

Conclusion:
This study will evaluate the current HL associations with adverse outcome. Given that HL is potentially modifiable, it is hoped that the HeaLTHI study will drive improvements in a shared patient and clinician priority area.

Miss Sophie Bowen

Trainee Vascular Scientist – University Hospitals Bristol and Weston

"A prospective evaluation of the current diagnostic pathway for patients with suspected giant cell arteritis"

Early diagnosis improves prognosis of patients with Giant Cell Arteritis (GCA) and prevents ischemic complications including blindness. Recent updates to GCA diagnostic guidelines recommend performing a temporal artery ultrasound scan within a fast-track setting. Many research studies have demonstrated the successful implementation of fast-track clinics where clinician assessment and diagnostic tests occur on the day of initial presentation. This style of service is not currently operating at our Trust, therefore current patient pathways need to be evaluated.

This study will be a prospective service evaluation composed of two parts; an audit of local adherence to current recommendations and a questionnaire for referring clinicians. The audit will assess the timeliness of current patient pathways including the initial assessment, treatment and ultrasound scan. This data will be collected by recording a detailed patient history before the scan. The questionnaire aims to better understand clinicians' views on the efficiency of the ultrasound service and will consist of predetermined rating scale questions relating to themes such as timeliness and communication. The scores for these questions will be combined to produce an overall clinician satisfaction score for each patient.

The findings of this study could influence local decision making regarding the diagnostic pathway for GCA.

Miss Hannah Davey

Trainee Vascular Scientist – University Hospital Southampton NHS Foundation Trust

"Transthoracic ultrasound evaluation of Thoracic aortic aneurysms"

Miss Hannah Davey[1], Mr Ian Nordon[1], Dr Rob Allison[1], Mr Ben Patterson[1], Mrs Puja Patel[1]

[1]Southampton General Hospital, Southampton, United Kingdom

Introduction:
Thoracic aortic aneurysms (TAA) are life threatening if they rupture but often go undetected. A pilot study found that ultrasound has potential to be used as a diagnostic modality for TAA and may have a role in surveillance in patients for whom CT scanning is contraindicated. However, further validation of this methodology is required.

Methods:
There will be two different groups: 1-Patients with a known TAA and 2-Patients with no TAA but known Abdominal Aortic Aneurysm. All patients will have had a prior CT. A Vascular Scientist, who will be blinded to the CT diagnosis, will perform an ultrasound assessment of the thoracic aorta and will record the maximum diameter. All measurements will be compared to the maximum diameter obtained from the most recent CT scan from the last 3 years.

Results:
The sensitivity and specificity of ultrasound will be analysed using cut-off points of both 35mm and 40mm. This will be done using a Clopper-Pearson confidence interval with a 95% confidence limit.

Conclusion:
If the results of this study support prior work suggesting that TAA can be accurately detected and measured by ultrasound, it could be used for those in whom CT is contraindicated and a screening programme.

Miss Shannon Halliwell

Trainee Vascular Scientist – University Hospitals Bristol and Weston

"A retrospective service evaluation investigating the role of carotid artery screening prior to elective cardiac surgery in reducing perioperative stroke rate"

A major complication associated with cardiac surgery is perioperative stroke; this risk is increased by Carotid Artery Stenosis (CAS). Screening for CAS using ultrasound is used to identify patients at greater risk of perioperative stroke. However, screening all cardiac surgery patients is not realistic. The literature around the subject is conflicted, which is reflected in the lack of official national guidelines on which cardiac patients should be screened. The local protocol indicates that all cardiac surgery patients with history of peripheral arterial disease, stroke/transient ischaemic attack, carotid bruit or left main stem disease should have a carotid scan before surgery.

Using local cardiac and vascular databases, the number of perioperative strokes in cardiac surgery cases between March 2018 and March 2021 will be recorded. And any cardiac surgery patients that had a pre-op carotid scan during the same time frame will be identified and CAS severity recorded.

By retrospectively analysing the stroke rate in approximately 4000 patients that did/didn't have pre-op CAS screening, this study aims to evaluate the current service and determine whether the local protocol is effective in reducing perioperative stroke rate. Additionally, these results will be used to determine any correlation between CAS severity and perioperative stroke.

Mr David Machin

Trainee Vascular Scientist – Gloucestershire Hospitals NHS Foundation Trust

"A single centre service evaluation examining the effectiveness of contrast enhanced ultrasound compared to computed tomography angiography and duplex ultrasound in the detection of endoleaks post endovascular aneurysm repair"

Objectives:
Endoleaks are a common complication post-Endovascular Aneurysm Repair (EVAR) and the reference for endoleak detection is Computed Tomography Angiography (CTA). Contrast Enhanced Ultrasound (CEUS) is emerging as a comparable modality with superior safety for endoleak detection and discrimination. This service evaluation aims to investigate whether CEUS is as effective at detecting endoleaks post-EVAR compared to CTA and Duplex Ultrasound (DUS). Secondary aims are to investigate modalities ability to discriminate endoleak-type and to examine relationships between CEUS contrast temporal delay and endoleak-type.

Methodology:
Data will be collected retrospectively and include patients referred for CEUS following residual sac expansion post-EVAR. Identification of endoleak-type will be recorded from DUS, CEUS and CTA scans since service implementation in 2019. Specificity, sensitivity and predictive values will be calculated from contingency tables with post-hoc comparative analysis including sensitivity to endoleak-type. Regression analysis will compare associations between endoleak-type and contrast temporal delay.

Future Implications:
This study is expected to demonstrate the efficacy of CEUS compared to CTA and DUS; particularly of value in CTA contraindicated patients and undifferentiated endoleak investigations. CEUS minimises radiation and nephrotoxin exposure and may reduce trust CTA demand. Investigations of CEUS contrast delay may provide a future quantification tool for endoleak discrimination.

Miss Rebecca Nygaard

Trainee Vascular Scientist – Nottingham University Hospitals NHS Trust

"An evaluation of using Ankle-Brachial Pressure Index (ABPI) and Toe-Brachial"

ABPI is the standard non-invasive diagnostic tool for quantifying the degree of peripheral arterial disease. However, its use can be complicated in individuals with diabetes mellitus, due to medial arterial calcification. This causes arterial stiffening, meaning vessels in the ankle can be difficult to occlude, leading to falsely elevated APBIs. Utilisation of TBI enables distal foot perfusion to be assessed via the digital arteries, which rarely develop calcification.

ABPI and TBI were previously not routinely used within my department pre- and post-angioplasty. However, more requests for toe pressures have been received recently from Vascular Consultants and Registrars.

This study will be a process evaluation of a 3-month pilot service within my department, utilising ABPI and TBI pre- and post-angioplasty as an addition to duplex ultrasound. It will assess the suitability of both ABPI and TBI pre- and post-intervention to evaluate reoccurrence of stenosis, assess sensitivity of ABPI and TBI, and decide if TBI alone is appropriate to use by our vascular department to reduce unnecessary duplex scans.

Miss Abigail Traynor

Trainee Vascular Scientist – Imperial College Healthcare NHS Trust

"A retrospective study on ultrasound velocity criteria for suspected Popliteal"

Miss Abigail Traynor[1], Mr Joseph Shalhoub[1]

[1]Imperial College NHS Healthcare Trust, London, United Kingdom

Introduction:
Popliteal Artery Entrapment Syndrome (PAES) presents a diagnostic challenge without a current reference standard to correlate clinical suspicion with diagnostic imaging. Due to the nature of entrapment, diagnosis favours Dynamic Duplex Ultrasound (DDUS). However, there is lack of clinical guidance regarding the role of DDUS or an 'equivocal' Peak Systolic Velocity (PSV).

Methods:
An 'equivocal' PAES diagnostic criteria (PSV ≤20cm/s; $DDUSpsv_{20}$) was implemented from 01/01/2015. Data was retrospectively collected from 70 consecutive patients (106 Limbs; 41±15y; both sexes) who underwent DDUS for suspected PAES (01/01/2015-31/12/2020; single NHS trust). Chi-square(X^2) was performed across DDUS, imaging and surgical outcome; interpreted using Cramer's V(⌀). Using ROC analysis, the sensitivity and specificity of DDUS will be compared against dynamic-invasive angiography and surgical findings; across different PSV cut-offs.

Results:
$DDUSpsv_{20}$ displayed the greatest agreement with dynamic-invasive angiography (X^2= 51.13,Φ=0.75), followed by CT angiography (X^2= 49.76,Φ=0.74), MR angiography (X^2= 47.35,Φ=0.71) and surgical findings (X^2= 9.75,Φ=0.46). For a cut-off ≤20cm/s, Area Under Curve (AUC)=0.53 & 0.61, representing a specificity (0.20 & 0.23%) and sensitivity (0.50 & 0.32%) for dynamic-invasive angiography and surgical outcome respectively.

Conclusion:
An 'equivocal' PSV criterion may facilitate triage and diagnosis of PAES, highlighting patients warranting further diagnostic investigation. However, the risk of false-positives should be considered within the clinical context.

Joint VASBI-SVTGBI Session

Miss Amy Bolsworth,
Vascular Scientist, Barts Health NHS Trust
Dr Ounali Jaffer,
Consultant Interventional Radiologist, Barts Health NHS Trust & *Hon. Sr lecturer*, QMUL
Dr Zaib Khawaja,
Specialty Doctor in Renal Transplant/Dialysis Access, University Hospitals Birmingham

"The role of US in Endo-AVF: Screening, Creation and Surveillance"

The success of endovascular arteriovenous fistula (Endo-AVF) procedures relies heavily on accurate and detailed mapping of the upper limb arteries and veins. Both the WavelinQ™ and Ellipsys® system have strict criteria to help identify candidates with suitable anatomy.

Both systems require the presence of a perforator just below the antecubital fossa measuring >2.0mm diameter however there are a number of other important factors to consider for each. For example, the WavelinQ™ system requires good access vessels at the wrist and in order to plan the procedure it is important to identify which superficial and deep veins the perforator communicates with. The Ellipsys® system requires favourable alignment of the radial artery and perforator; the radial artery in the proximal forearm must be <1.5mm from the perforator. As with surgical fistulas, both require adequate inflow via the brachial artery and outflow via either the basilic or cephalic vein.

Endo-AVF formation has gathered pace in recent years in terms of both procedures performed, as well as a wider recognition within the vascular access community. Unlike conventional surgical fistula formation, the procedure does not require a surgical incision and therefore no subsequent scar is seen.

Currently, there are two devices available: the Wavelinq™ and Ellipsys® systems. Whilst both require the presence of a perforator vein to allow flow to the superficial venous system, the site and method of creation differs. The Wavelinq™ system creates the fistula by use of a radiofrequency pulse between either the proximal radial artery and vein, or proximal ulnar artery and vein within the proximal forearm, just prior to the perforator vein. The Ellipsys® system creates a direct fistula between the radial artery and perforator vein. Both then subsequently create a split flow fistula, with flow directed to both the cephalic and basilic veins.

In both systems, the process of preprocedural ultrasound mapping, the procedure itself and post procedural surveillance hold equal weight in ensuring a successful and sustainable program.

This session aims to provide an overview of how screening differs from conventional surgical fistula mapping and which additional measurements are required for the current systems of endo-AVF formation. In addition, the specifics of the how the procedure is performed for both devices will be detailed with specific emphasis on how ultrasound use is crucial in both. The session will be rounded off with an explanation of best practice in surveying Endo-AVF's.

Mr Jonathan De Siqueira

NIHR Clinical Lecturer in Vascular Surgery – University of Leeds
Deputy Chair, Vascular Access Special Interest Group, Vascular Society GB&I

"Defining research priorities in vascular access: a joint VSGBI/JLA PSP"

J De Siqueira[1], K Fielding[1], G Pettigrew[1], M Robson[1], S Rogers[1,2], W Withers[1], J Long[1], T Gronlund[3], I Chetter[1], G Smith[1]

[1]Vascular Society of GB&I Vascular Access Special Interest Group
[2]Society of Vascular Technology of GB&I
[3]James Lind Alliance

Introduction:
There remain substantial unanswered questions and a dearth of high-quality evidence to guide practice in vascular access for haemodialysis. In order to identify how future research in vascular access should be directed, the Vascular Society of Great Britain and Ireland aimed to conduct a priority setting partnership involving multiple disciplines, specialties, patients and carers, in collaboration with the James Lind Alliance.

Methods:
Four rounds of national surveys were circulated to identify and prioritise professional and patient questions in vascular access. Surveys were advertised through relevant charities and patient groups. Questions were consolidated and prioritised to a final list of 10 in a representative workshop.

Results:
1911 questions were submitted within all areas of vascular surgery. Following consolidation and categorisation, 15 questions were taken to a final vascular access prioritisation workshop. The workshop determined the top 10 questions which best represented the joint priorities of patients, carers and professionals.

Conclusion:
These research priorities, which will be presented in this presentation, should help to direct and contextualise future research in vascular access.

SVT Heads of Department Meeting

Wednesday 1st December 2021

5pm to 6pm

Agenda

1) Welcome
   - Members present
   - Previous minutes

2) Post pandemic issues

3) Practical exams and accreditation

4) The SVT in the future?

5) A.O.B

6) Close of meeting and date of future H.O.S meeting

Thursday 2nd December

Main Programme Room – Charter 3

Trainee Breakout Room – Exchange 10

Presentations of recently completed research projects by newly qualified vascular scientists

Mr Ian Hornby

Junior Vascular Scientist - University Hospitals Bristol & Weston

"Retrospective analysis of abdominal aortic aneurysm growth rate in patients undergoing local ultrasound surveillance"

Background:
Abdominal Aortic Aneurysm (AAA) ultrasound surveillance varies between hospitals in the UK. This hospital adopts a 6-monthly surveillance-interval for 4.5cm-4.9cm AAA, which is a deviation from nationally recommended 3-monthly intervals. Assessment of AAA growth rate (GR), and the concurrent impact of AAA risk factors (RF) for growth and medications prescribed for RFs, may inform whether this change in surveillance-intervals is safe and appropriate.

Methods:
This analysis was conducted retrospectively. 1312 AAA ultrasound scans from 315 patients between January 2015 and March 2020 were split into 0.5cm groups, ranging from 3.0cm-5.5cm. AAA GR was assessed with one-way ANOVA. The impact of RFs and RF medication on AAA GR were analysed using multivariate and univariate linear regression and Kruskel-Wallis tests. Patient cause of death amongst surveillance patients was recorded.

Results:
AAA GR was significantly associated with increased AAA diameter ($P<0.001$). There was a significant whole-group reduction in GR from 0.29cm/year to 0.19cm/year in diabetics compared to non-diabetics ($P=0.02$), supported by univariate linear regression ($P=0.04$). Additionally, gliclazide patients had lower GR compared to patients not on the medication ($P=0.04$). One AAA-rupture occurred <5.5cm resulting in death.

Conclusions:
AAA measuring 4.5cm-4.9cm had a mean GR of 0.3cm/year (± 0.18cm/year). Therefore, mean GR and variability suggest patients are unlikely to surpass surgical threshold of 5.5cm between the 6-monthly surveillance scans, supported by low rupture rates. This suggests the surveillance-interval for 4.5cm-4.9cm AAA is a safe and appropriate deviation from national guidance. Additionally, it may be pertinent to consider diabetes status when designing surveillance-intervals.

Miss Emily Morgan

Clinical Vascular Scientist - University Hospitals Bristol & Weston

"Prospective evaluation of inpatient treatment for lower limb Deep Venous Thrombosis (DVT)"

Miss Emily Morgan[1], Mrs Teresa Robinson, Mrs Sarah Westbury

[1]Bristol Royal Infirmary, Bristol, United Kingdom

Introduction:
Previous local audits in 2017 and 2018 have identified variability in the treatment and management of inpatient DVTs. Not all inpatients were treated with anticoagulants and the rationale behind these decisions was often poorly documented and difficult to ascertain retrospectively. Since then, the Trust has issued new guidance on the treatment of inpatient DVT. This study aims to reassess the management of inpatients with DVT.

Methods:
Between August 2020 and March 2021, the Vascular Science worklist was used to identify inpatients with a confirmed DVT. Patients with chronic thrombus or on long term anticoagulation were excluded. The following day the referring clinician was sent a study specific questionnaire to obtain the treatment plan and rationale.

Results:
36 inpatients with a confirmed DVT were identified. 71% of clinicians responded within 24 hours of receiving the initial e-mail. All 36 patients were treated with anticoagulation (table 1). The type of anticoagulant (direct-acting anticoagulants or low-molecular-weight heparin) was clearly documented and adjusted according to risk factors, comorbidities, contraindications and personal preferences.

Conclusion:
The inpatient treatment of lower limb DVTs is in accordance with the Trust guidance and clearly documented in the medical notes.

Table 1 – Trust guidance for treatment of DVT

Trust guidance for treatment of DVT		**Contraindications**	**Apixaban**	**Rivaroxaban**	**Enoxaparin**
Cancer patients requiring therapeutic anticoagulation for VTE	DOAC - Apixaban/Rivaroxaban if CrCl is <30 ml/min then low-molecular weight heparin (LMWH) - Enoxaparin should be prescribed.	DOAC not advised in patients with luminal gastrointestinal cancers.	6		
Adults with unprovoked VTE	DOAC - Apixaban 10 mg BD (D1-7), 5mg BD (from D7) or Rivaroxaban 15 mg BD (D1-21), 20 mg OD (D22) onwards.	If creatinine clearance (CrCl) <15 ml/min or caution if CrCl is <30 ml/min.	11		
Adults with symptomatic VTE and additional risk factors	LMWH - Enoxaparin/Clexane 1mg/kg BD initially.	If creatinine clearance (CrCl) <20 ml/min.	**4**	**3**	12
Total patients			21	3	12

DVT, Deep Vein Thrombosis; *VTE*, Venous thromboembolism; *DOAC,* Direct Oral AntiCoagulation; *CrCL,* Creatinine Clearance; *BD,* twice daily; *OD,* once daily.

Dr Osian Llwyd

Clinical Vascular Scientist - Oxford University Hospitals NHS Foundation Trust

"The feasibility of assessing Cerebrovascular Reactivity with Carotid Duplex ultrasound (Duplex-CVR)"

Dr Osian Llwyd[1], Mr Klaus Bond, Professor Stephen Payne, Professor Alastair Webb

[1]Oxford University Hospitals, Oxford, United Kingdom

Introduction:
The Internal Carotid Artery (ICA) could be a suitable location to assess cerebrovascular function. This study determined the feasibility of using Duplex ultrasound to assess Cerebrovascular Reactivity (CVR); the changes to blood flow that occur in response to a stimulus such as CO_2.

Methods:
CVR was assessed with Breath-Hold (BH) for up to 30 seconds and Rapid-Breathing (RB) for up to 60 seconds. Capnography monitored breathing rate and end-tidal CO_2 ($etCO_2$). Duplex ultrasound of the ICA measured blood flow velocity (BFV) and diameter of the artery (ø). The number of good quality Duplex (measurable change in BFV and ø) and $etCO_2$ (>10% change in $etCO_2$) recordings was used to determine the feasibility of each manoeuvre.

Results:
Fifty patients (15 female, 68 ± 13 years old) were recruited. During Resting, BH and RB, data recordings were of good quality (table 2) in 96, 78 and 86% respectively. During BH and RB measurable and predicted changes occurred in BFV, ø, volume flow, pulsatility index and resistive index.

Conclusion:
Duplex-CVR can be performed in patients undergoing a routine carotid Duplex assessment and can provide high-resolution imaging of changes in BFV that occurs in relation to changes in $etCO_2$, which can then be used to provide indices of CVR.

Table 2 – Quality of data recordings and changes in physiological parameters following resting, breath-hold and rapid-breathing manoeuvre

	n	Resting	*n*	Breath-Hold	*n*	Rapid-Breathing
Quality of Data						
$etCO_2$						
Manoeuvre duration (s)	50	60	48	22 (9)	49	46 (10)
% Change in $etCO_2$	50	2.4 (1.2-4.9)	48	23.8 (10.7)	49	19.4 (9)
>10% change in $etCO_2$ (%)	3	6	44	88	43	86
Poor Quality Duplex Ultrasound						
Doppler waveform (%)	2	4	5	10	3	6
Carotid artery ø (%)	0	0	2	4	0	0
Good Duplex & $etCO_2$ (%)	**48**	**96**	**39**	**78**	**43**	**86**
Physiological Parameter						
$etCO_2$ (%)						
Baseline	48	4.60 (4.30-5.02)	39	4.69 (4.46-5.24)	43	4.54 (0.63)
Manoeuvre			39	5.87 (5.47-6.09) #	43	3.63 (0.71) #
Recovery	48	4.68 (4.35-5.02)	39	4.68 (4.41-5.17) $	43	4.25 (0.67) # $
TAMEAN (cm/s)						
Baseline	48	23.5 (6.3)	39	22.6 (18.7-28.4)	43	22.9 (5.9)
Manoeuvre			39	31.6 (8.6) #	43	19.0 (5.9) #
Recovery	48	23.8 (6.7)	39	24.1 (7.6) $	43	20.7 (6.2) # $
Relative Changes						
% Change in BFV			39	34.4 (17.4)	43	18.4 (10)
CVR (% BFV/% etCO2)			39	1.5 (0.9)	43	0.9 (0.6-1.2)

Data are presented as n (% of available data), mean (standard deviation) or median (inter-quartile range, 25^{th} to 75^{th} percentile), as appropriate.
P-value for physiological parameters are based on paired t-test/Wilcoxon (resting) or repeated-measures ANOVA (breath-hold/rapid-breathing) within each manoeuvre.
n, number of participants; $etCO_2$, end tidal CO_2; BFV, blood flow velocity; TAMEAN, time-averaged mean velocity. #p<0.05 vs. baseline; $p<0.05 vs. manoeuvre.

Miss Hannah Lord

Clinical Vascular Scientist - King's College Hospital NHS Foundation Trust

"A service evaluation of Abdominal Aortic Aneurysm ultrasound surveillance in a large London teaching hospital"

Background:
Regular Duplex ultrasound surveillance is essential in monitoring growth of Abdominal Aortic Aneurysms (AAA) to prevent rupture. This study evaluates the coordination of imaging in the AAA pathway in a large London teaching hospital.

Methods:
This retrospective single-centre cohort study used data from medical records to assess the outcomes for patients who received an ultrasound of their AAA between January 2018 and December 2018. Reasons for unbooked surveillance were documented and categorised. Status of surgical clinic appointments were also investigated to determine the number of patients lost to follow up.

Results:
312 patients were included in this study. 43% (n=134) had follow-up surveillance booked. Reasons for missing follow-up included: clinic discharge, death, intervention and relocation. 9 patients were considered completely lost to follow- up. In total, 157 patients were identified as having a clinical indication for receiving subsequent duplex ultrasound surveillance. Of this group, 85% (n=133) had appropriate follow-up ultrasound organised, whilst 15% (n=4) did not.

Conclusion:
Inadequate coordination of AAA surveillance increases wasted clinic time and risks losing patients to follow-up. This study highlighted an area of improvement in the AAA surveillance pathway with potential for vascular scientists to support medical colleagues by assuming responsibility for follow-up.

Mr Amine Turay

Clinical Vascular Scientist - Imperial College Healthcare NHS Trust

"Should the iliac veins and veins below the knee be scanned routinely as part of the protocol in ultrasound scanning for deep vein thrombosis diagnosis?"

Clinical guidance for ultrasound scanning protocols currently varies regarding whether the IVC/iliac veins and veins within the calf should be routinely scanned. The protocol followed at Imperial recommends that the IVC/iliac veins and calf veins should be scanned routinely.

The aim of this project was to determine whether the protocol followed at Imperial could play a wider role in the diagnosis of DVTs and therefore, whether it would be beneficial to be adopted by other centres. Routinely scanning the iliac veins has provided the opportunity for the reliability of phasicity within the common femoral vein (CFV) to determine whether thrombus is present or absent within the IVC/iliac veins to be validated.

Of the DVTs identified, 41% were isolated calf DVTs, suggesting that scanning the calf may have some clinical relevance. Only one patient with an isolated iliac DVT would have been misdiagnosed if the Imperial protocol had not been followed.

The sensitivity of phasicity alone was 72%; whereas this improved to 96% when the patient's history, clinician suspicion and phasicity were taken into account. Demonstrating phasicity to be a useful tool.

Scientific Presentations and Case Studies

Miss Emily Hillier

Vascular Scientist – King's College Hospital NHS Foundation Trust

"Case study – Superior Mesenteric Artery (SMA) syndrome"

Miss Emily Hillier[1], Ms Helen Dixon[1]

[1]King's Hospital NHS Foundation Trust, London, United Kingdom

SMA syndrome, also known as Wilkie's syndrome, is a rare cause of small bowel obstruction. It is caused by a decrease in the aorto-mesenteric angle which leads to compression of the duodenum.

The presentation will describe a case study of a 23-year-old male with a complex GI history referred to the vascular laboratory for assessment for SMA syndrome. Normal appearance of the SMA will be reviewed. The abnormal ultrasound appearances of significantly reduced aorto-mesenteric angle seen in this case will demonstrated. Clinical history of the case as well as other causes of SMA syndrome and the use of other imaging modalities will be discussed.

Miss Alison Phair

PhD Student – The University of Manchester
ST6 Vascular Surgery Trainee – Manchester University NHS FT

"Semi-automatic measurement of carotid plaque volume using 3D ultrasound: a potential new clinical tool"

Miss Alison Phair[1,2], Mr Jonathan Ghosh[1,2], Professor Charles McCollum[1], Professor Craig Smith[3], Dr Steven Rogers[1,2]

[1]Division of Cardiovascular Sciences, University of Manchester, Manchester, UK,
[2]Department of Vascular Surgery, Manchester University NHS foundation trust, Manchester, UK,
[3]Lydia Becker Institute of Immunology and Inflammation, Division of Cardiovascular Sciences, University of Manchester, Manchester, UK

Background:
Stenosis is a poor predictor of stroke, particularly in asymptomatic carotid disease. Carotid plaque volume (CPV), as measured by 3D-ultrasound, may be a better predictor but long analysis time limits clinical utility. This study tested accuracy of Artificial Intelligence derived semi-automatic CPV measurement plus the time saved.

Methods:
Semi-automatic CPV(Auto-CPV) was measured from 94 3D ultrasound scans by two blinded operators using the semi-automated software (PIUR imaging, GmbH, Austria). Inter- and intra-rater agreement, accuracy compared with the surgical volume and measurement time compared with previous manual CPV measurement were calculated.

Results:
Inter- and Intra-observer error was good with mean difference (±sd) [95%CI] -0.03 (0.19) {-0.40-0.35}cm3 and -0.09(0.13) {-0.33–0.16}cm3 respectively. Both showed excellent correlation and narrow confidence intervals, ICC=0.95;95% CI (0.92-0.96) and ICC=0.97, 95% CI (0.85-0.99). Auto-CPV compared well to the surgical volume with a mean difference(±sd)[95%CI] -0.05 (0.25) [-0.53-0.43]cm3. Correlation was excellent (ICC= 0.91, 95%CI 0.86-0.94) (Fig.1)nn. Auto-CPV measurement was faster than previous manual CPV measurement time with median (IQR) 05:39(01:58) minutes compared to 13:05(04:15) minutes, $p<0.01$.

Conclusion:
Auto-CPV assessment is accurate, reproducible and significantly faster than previous methods. Improved feasibility means CPV could be routinely assessed prior to surgery or used in large cohort studies to stratify risk in asymptomatic carotid disease.

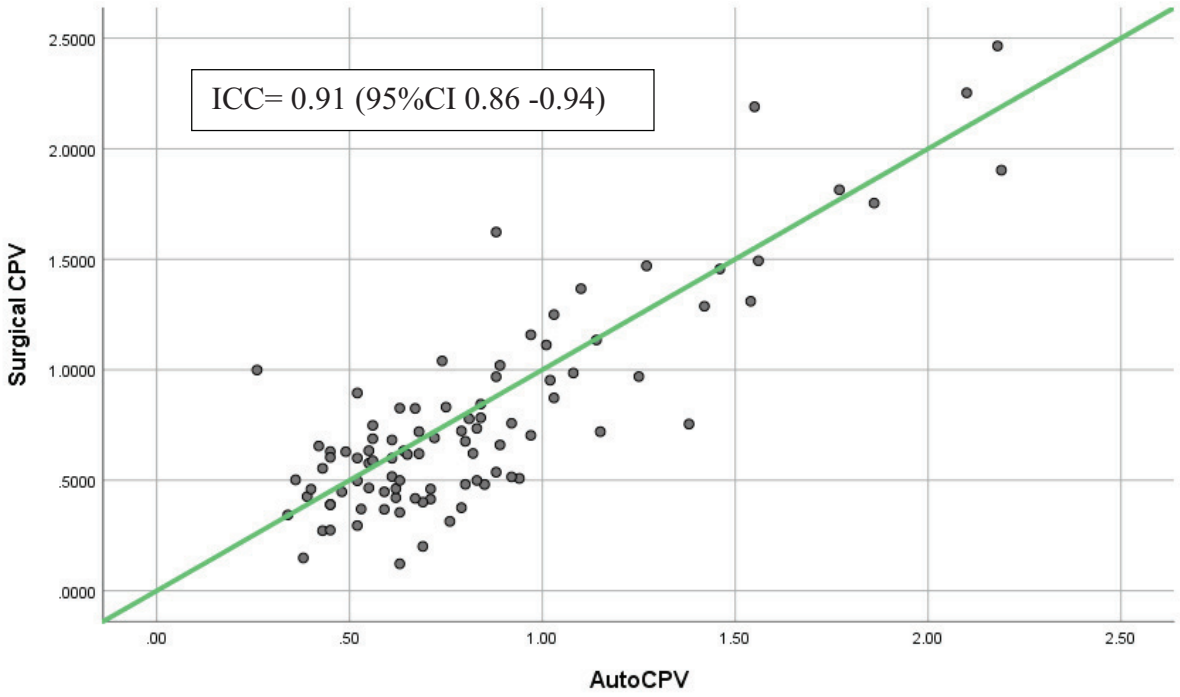


Figure 1 - Interclass correlation between the surgical plaque volume and the Auto-CPV.

Mrs Nicolette Kelly

Clinical Vascular Scientist – Worcestershire Acute Hospitals NHS Trust

"Persistent Sciatic Artery"

Background:
A Persistent Sciatic Artery (PSA) has a reported incidence of 0.03-0.06% making it a rare entity. However, it carries a significantly high risk for aneurysmal degeneration in up to 40% of cases. Rupture, thrombosis and distal embolisation are known complications with risk of lower limb amputation.

Presentation:
A 66-year-old male presented with 9-month history of left posterior buttock and thigh pain. Cowie sign was negative as he had palpable femoral and popliteal pulses on the indexed limb. A pulsatile mass was present in the left buttock.

Imaging:
Arterial duplex identified left superficial femoral artery (SFA) that deviated from the femoral vein. The popliteal artery was noted patent distally, however, when tracked proximally demonstrated occlusion leading to a partially thrombosed fusiform aneurysm in the gluteal region. Computed tomography angiogram confirmed the diagnosis of a partially thrombosed persistent sciatic artery aneurysm measuring 4.5 cm with an incomplete SFA (Pillet-Gauffre classification 2a).

Management:
Endovascular approach was decided and occlusion of the PSA aneurysm sac achieved. Follow-up arterial duplex 8 weeks post-treatment confirmed occlusion of the PSA aneurysm.

Conclusion:
Arterial duplex scans can identify aberrant anatomy with sufficient information to make the initial diagnosis of this rare clinical entity.

Dr David Barrett

Trainee Vascular Scientist – Manchester University NHS FT & IVS Ltd

"Popliteal Artery Entrapment Syndrome – Using Ultrasound to Determine What is Normal vs Pathogenic"

Dr David Barrett[1], Mr Michael Crook[1], Mr Joao Carreira[1], Dr Fiona Burrows[1], Dr Steven Rogers[2]

[1]Independent Vascular Services Ltd., Manchester,
[2]Division of Cardiovascular Sciences, University of Manchester.

Introduction:
Popliteal Entrapment Syndrome (PAES) is a rare condition whereby musculoskeletal structures compress the popliteal artery (POPA) leading to vascular or neurogenic symptoms. This study investigates dynamic plantar and dorsal loading to develop a diagnostic ultrasound-based protocol.

Methods:
Healthy individuals, elite athletes, and symptomatic PAES patients were recruited with triplex ultrasound imaging of both legs being performed (n=112). Proximal and distal POPA's in dorsi- and plantar- flexion in erect and prone positions were imaged at rest and with loading.

Results:
Full compression most commonly occurred in the distal POPA whilst prone during plantar-flexion (70%) compared to the proximal vessel. When prone, control (n=22, 55%), athletes (n=28, 70%), and patients (n=23, 77%) had distal compression in plantar-flexion. When prone, control (n=1, 2.5%), athletes (n=2, 5%), and patients (n=6, 20%) had distal compression under dorsi-flexion. When erect, compression was only noted in the patient group under both dorsi-flexion (n=7, 17.5%) and plantar-flexion (n=8, 20%).

Conclusion:
Compression of the POPA seen by ultrasound should not be the sole diagnostic criteria for PAES. POPA compression exists in healthy, asymptomatic individuals, primarily in prone plantar-flexion. The use of triplex ultrasound imaging is ideal for functional PAES diagnosis due to its dynamic and real-time capabilities.

Ms Helen Dixon

Senior Clinical Vascular Scientist – King's College Hospital NHS Foundation Trust

"Case study - Transient Perivascular Inflammation of the Carotid artery (TIPIC) syndrome"

Dr Fiona Norwood[1], **Ms Helen Dixon[1]**

[1]King's College Hospital NHS Foundation Trust, London, United Kingdom

Transient Perivascular Inflammation of the Carotid artery (TIPIC) syndrome, formerly known as carotidynia and first described in 1927 by Temple Fay, is a condition which presents as unilateral neck pain overlying the site of the carotid bulb.

TIPIC syndrome is believed to be caused by a transient inflammatory process in the vessel wall and pericarotid tissue, and treatment methods include non-steroidal anti-inflammatory drugs, aspirin or steroids in some cases.

Ultrasound appearances are of increased echogenicity around the distal CCA and carotid bulb and there may also be soft plaque present. MRI is also used in diagnosis and demonstrates perivascular enhancement. During diagnosis other conditions with similar presentation, for example vasculitis and dissection should be excluded.

This presentation will discuss clinical presentation and demonstrate the ultrasonographic features associated with this condition.

Miss Alison Phair

PhD Student – The University of Manchester
ST6 Vascular Surgery Trainee – Manchester University NHS FT

"Measuring carotid plaque content with grey-scale median by 3D ultrasound"

Miss Alison Phair[1,2], Mr Jonathan Ghosh[1,2], Dr Fiona Wilkinson[3], Dr Ria Weston[3], Professor Frank Bowling[1,2], Professor Craig Smith[4], Dr Steven Rogers[1,2]

[1]Division of Cardiovascular Sciences, University of Manchester, Manchester, UK,
[2]Department of Vascular Surgery, Manchester University NHS foundation trust, Manchester, UK,
[3]Centre for Bioscience, Manchester Metropolitan University, Manchester, UK,
[4]Lydia Becker Institute of Immunology and Inflammation, Division of Cardiovascular Sciences. University of Manchester, Manchester, UK

Introduction:
Lipid/thrombus-laden Carotid plaques are more vulnerable to rupture and cause stroke. Determining plaque composition, prior to considering surgery, may identify asymptomatic patients at risk. Ultrasound evaluation of Grey-scale median (GSM) gives an objective measure of plaque content. We tested the reproducibility and accuracy of GSM measured by 3D ultrasound.

Methods:
3D-ultrasound GSM (3D-GSM) was performed in 49 symptomatic and 11 asymptomatic carotid disease patients, prior to surgery. Two blinded observers repeated measurements for inter and intra-rater agreement. Wilcoxon rank sum test compared the means between groups and Bland Altman agreement and Interclass correlations were performed for reliability assessment.

Results:
Mean (sd) 3D-GSM in the symptomatic group was 57(13) and in the asymptomatic group was 64(7), Wilcoxon rank sum test p=0.056. Intra-observer mean difference (±sd) [95%CI] was -1.1 (6.69) [-14.22-12.00] with excellent ICC = 0.93 (0.88-0.96) and narrow confidence intervals. Inter-observer mean difference (±sd) [95%CI] was 4(9.29) [-14.2-22.2] with good correlation ICC = 0.89 (95%CI 0.58-0.97).

Conclusion:
GSM can be measured by 3D ultrasound with good reproducibility between observers. Its role in assessment of asymptomatic disease can now be tested.

Dr Nazia Saeed

Senior Clinical Vascular Scientist – London North West University Healthcare NHS Trust

"Carotid Web; Missed on Duplex"

Dr Nazia Saeed[1], Dr Edmund Charles[1], Mr Selva Theivacumar[1], Dr Kamran Modaresi[1]

[1]London Northwest University Healthcare NHS Trust.

Carotid webs are a rare and frequently misdiagnosed cause of recurrent Transient Ischaemic Strokes (TIA) in patients without cardiovascular risk factors. This case study examines the challenges faced by clinical vascular scientists when presented with rare phenomena such as a carotid web.

A 45-year-old male of south Asian descent, with no significant medical history, who experienced multiple left sided TIAs in the last 2 years was being managed conservatively. On two out of three occasions the presence of a carotid web was missed during a routine TIA clinic carotid duplex ultrasound (DUS).

Following his most recent episode of left sided weakness and slurred speech, where the DUS was essentially normal, the patient went on to have a CTA where a 'narrowing' and a left sided posterior web was visualised, later confirmed by repeat DUS and MRA. The patient was treated surgically with an endarterectomy and removal of the web with no recurrence of symptoms after 6 weeks.

When carotid arteries in otherwise well young stroke patients are imaged by DUS, pathologies such as carotid webs can be overlooked; such patients should raise suspicion and carry a low threshold for seeking alternative imaging modalities.

The Great Debate

"Should vascular ultrasound *only* be performed by experienced vascular scientists"

For the motion: **Mrs Lynne Macrae**, *SVT Membership Secretary*
Prof. Alun Davies, *Professor of Vascular Surgery*

Against the motion: **Dr Kamran Modaresi**, *SVT Vice President Elect*
Mrs Sophie Renton, *Vascular Society Honorary Secretary*
Mrs Louise Allen, *SVN President*

For:

Should only Vascular Scientists do Vascular Ultrasound Scans? Yes! Vascular Ultrasound Imaging requires Knowledge, Skill, Competence, Experience, Time and Continued Professional Development (CPD).

Knowledge of anatomy, physics, medical conditions and ultrasound imaging. Skill which is honed by years of continuous practice. Competence, which is shown by passing theory exams, practical exams and a strict protocol adherence set by the SVT. Experience, from repeated imaging of normal scans and abnormalities being detected. Time, over which new things are repeatedly found and also time which is required to give a comprehensive scan result. CPD within the confines of the SVT, the continual learning and proving of your ability to provide an accurate diagnostic service for our patients.

Anyone can pick up a probe, place it on the skin, push the buttons on the machine and get an image, but it takes a skilled operative to provide an accurate scan which encompasses all of the above. Providing a quick scan in a setting outside of the Vascular Lab may have some advantages, but repeat scans could be needed in the lab, further inconveniencing patients and using up vital resources.

Arguably other professionals can be trained to scan but they would need the correct training, testing and CPD, which in essence is the route to being a Vascular Scientist.

Against:

Duplex Ultrasound is currently an unregulated imaging modality. One of the original aims of the Society for Vascular Technology of Great Britain & Ireland was to bring together all professionals using Duplex Ultrasound so that issues surrounding training, research, governance and continuing development could be addressed collectively.

The debate today will focus on why our Society is perfectly placed to help support professionals interested in the correct and safe use of Duplex Ultrasound. The scientific, academic, nursing or medical background of the practitioner is not an issue as long as correct and approved training is undertaken with recognised sign off, with Continuing Professional Development (CPD) and ideally registration on a Professional Standards Authority register such as AHCS /HCPC or the AVS register. However, the above doesn't preclude clinicians looking at superficial vein incompetence (primary/recurrent) for planning endovenous or surgical treatment or assessing for deep vein incompetence for medical/compression therapy. As long as the practitioner is aware of their own limitations as well as equipment limitations and have access to Clinical Vascular Scientists if required.

Prof. Justin Mason

Professor of Vascular Rheumatology – Imperial Collage London
Head of Vascular Sciences – Imperial Collage London
Head of Cardiovascular Division – National Heart and Lung Institute
Co-Director Centre of Vasculitis Research – Imperial Collage London
Chair Project Grant Committee – British Heart Foundation

"Role of MRA and PET, compared with US, in the management of patients with large vessel vasculitis"

Non-invasive imaging has become a critical component in the management of the large vessel vasculitides including Takayasu arteritis, Giant Cell Arteritis and IgG4-related disease. Having largely replaced intra-arterial angiography, its use may facilitate earlier diagnosis and prompt identification of relapse. More accurate monitoring of disease activity and sensitive detection of arterial injury allows more precise titration of therapy. The key modalities are high-resolution ultrasound (US), Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI), and Computerised Tomography (CT). Their application requires close collaboration with imaging specialists and important questions remain concerning the optimal technique to use at different stages of disease. To date, no single method permits diagnosis and assessment of disease extent; accurate quantification of disease activity in the arterial wall; or demonstration of response to immunosuppressive therapy to allow precise tailoring of therapy to disease activity. However, specific techniques in context-dependent settings and combination use of the current techniques comes close to achieving this

Although progress in the imaging field has been remarkably rapid, a number of important challenges remain and further improvements are required. Imaging methods for precise quantification of arterial damage are lacking. No single technique is able to accurately determine disease activity within the arterial wall or distinguish inflammatory and non-inflammatory disease progression. There is a relative paucity of controlled prospective imaging studies. Moreover, expertise in interpretation of high-resolution US is not available everywhere, some non-invasive imaging techniques remains very expensive and access is limited in many countries.

Knowledge of the pros and cons of individual imaging modalities will assist the supervising physician and imaging specialists in selection of the most appropriate scanning technique at each stage of disease management. This in turn requires a detailed understanding of disease pathogenesis and the patterns of vascular involvement seen in the different large vessel vasculitides.

The lecture will review all aspects of current imaging approaches in the large vessel vasculitides comparing US, MRA and PET and including recent advances and current research priorities.

Mr Neil Hopper

Consultant Vascular Surgeon – Royal Cornwall NHS Trust

"Personal experience of being a vascular surgeon and a bilateral lower limb amputee. How can my experience help my patients?"

I am a 45-year-old Vascular Surgeon working at the Royal Cornwall Hospital in Truro, UK. I am married to Rachel (a Matron in Cancer Services) and have 2 children - Harry (7) and Evie (11).

I graduated top of my year from the University of Wales College of Medicine in 2000 and also have a degree in Anatomical Sciences and a Doctorate in Research Medicine.

I became a junior doctor with the intention of following a career in palliative care but I enjoyed my surgical house job so much that I switched to wanting to be a surgeon. As a registrar I really enjoyed Vascular Surgery and therefore became a vascular surgeon.

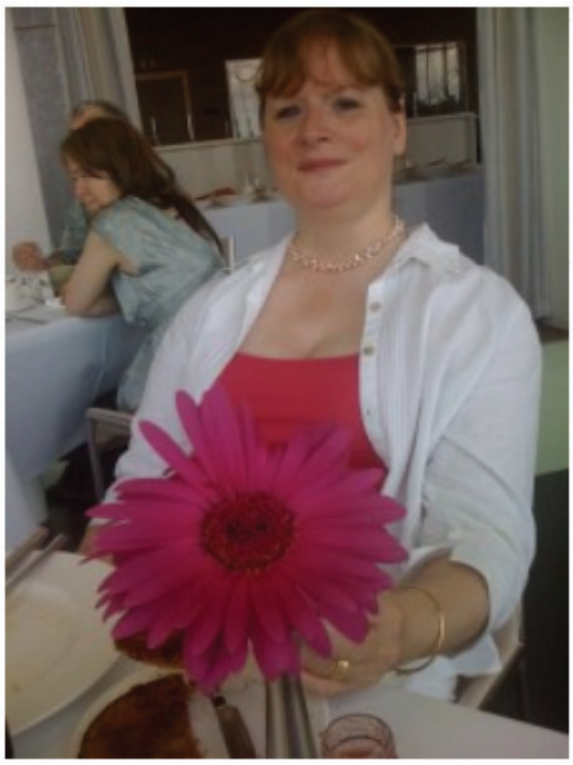
In 2011 I undertook a yearlong fellowship in St Vincent's Hospital in Sydney. I returned to Wales and then in 2013 I was appointed as a consultant at the Royal Cornwall Hospital in Truro.

I consider myself more of an open than endovascular surgeon. I enjoy the challenges of revision vascular surgery the most.

In April 2019 I became unwell with sepsis and lost both legs below the knee. I returned to part-time work in October 2019 and resumed full duties with full on-call in February 2020. Since my return I have also become a clinical lecturer in Anatomy for the University of Exeter.

I found being on the other side of the knife difficult but also fascinating. I have since had a television documentary made about my experiences, found social media and have spoken about my unique journey. I believe that shifting our perspectives, for even the briefest of moments, really enhances the care we provide.

Jackie Walton Lecture



Jackie Walton was a pioneering Vascular Scientist who was instrumental in helping create the Accredited Vascular Scientist training programme and quite righty was the SVT's first President. This lecture honours Jackie's name where each year we invite one speaker to present pivotal results that aim to advance the field of vascular science.

This year's honour goes to Mr Gurdeep Jandu.

Mr Gurdeep Jandu

Interventional Vascular Scientist & Operations Manager – My Vein Clinic
Senior Clinical Vascular Scientist – IVS Ltd

"The role of an interventional vascular scientist in venous procedures and my journey so far"

Working as a vascular scientist for 12 years in the NHS, developing the role of a vascular scientist through the treatment of varicose veins, was important to me.

Minimally invasive varicose vein treatment meant, patients can be treated as day cases and out-dated methods of venous stripping for primary varicose veins have been replaced. The technical feasibility of these non-invasive methods plus their ultrasound dependence clearly put them within the skill set of vascular scientists. However, the NHS sadly did not have scope to develop this role; therefore, private practice was the way forward.

Through vascular surgeon mentoring, coupled with direct observational learning and competencies, we worked on developing my skills to treat varicose veins at a consultant level. The one-to-one teaching from vascular consultants led to understanding of how treatments work and why one was more suited than the other for a patient in every circumstances.

Through each training step a portfolio of evidence was gradually built as I transitioned into an Interventional Vascular Scientist, treating patients within the clinic in all venous treatments from micro-sclerotherapy to Radio-frequency ablation and Venaseal.

My knowledge and the teachings I received from my consultant mentors, developed into a two-year training programme for all staff.

Interventional Vascular Scientists represent much needed benefits in cost for the NHS and clinical/waiting list benefits for patients but a long overdue career development for senior Clinical Vascular Scientists too.

This Lecture will chart the course we developed, my successes and failures; outlining the process that you could follow too.

Mr Dan Carradice

Chair of the Venous SIG – Vascular Society of Great Britain and Ireland
Senior Lecturer & Consultant Endo/Vascular Surgeon - Hull York Medical School
Vascular Surgical Specialty Lead – Royal College of Surgeons of England
Council Member Venous Section - Royal Society of Medicine

"Patient led prioritisation of venous research and national multidisciplinary research collaboration."

The Special Interest Research Groups (SIGs) of the Vascular Society have been formed aiming to foster collaboration and support nationally for vascular research. The desire is to create a multidisciplinary research community improving research quality and participation, developing and supporting new Chief and Principal investigators and shifting the balance of prioritisation towards the questions which are most important to patients and those around them.

The venous SIG in conjunction with the Circulation Foundation and James Lind Alliance have completed a process of patient led prioritisation. This presentation will unveil these top priorities and outline the opportunities for the audience to get involved with the SIG and research programmes.

Annual General Meeting

ANNUAL GENERAL MEETING

Thursday 2nd December 2021

16:30 - 17:15

Agenda

1) Education Committee

2) Professional Standards

3) Membership

4) Treasurer

5) Research Committee

6) BMUS Report

7) President's Report

8) Members' Q&A open session

SVT Education Committee Report

Educational Pathways

This year has seen the STP Curriculum Review take place and the updated curriculum was published and implemented from 2022 intake.

Theory Exam

As of Spring 2021 the process of taking the theory exams have changed to improve access to all students.

Members can now take their Vascular Technology or Ultrasound Physics, Haemodynamics and Instrumentation exam **all year round**

The exams can either be taken at selected Pearson Vue Centres across the UK and Ireland or taken online using a proctored system which can be accessed from anywhere in the world

Exam results are now given immediately after completion of the exam

If you fail the exam, you must wait 3 months before retaking the exam again

If you have any queries regarding the theory exam application, please contact theoryexam@svtgbi.org.uk

Item Development Workshop

Virtual Item Development workshops have taken place in conjunction with Inteleos with approximately 30 questions vetted and added to the question bank. A further 2 more sessions are planned for this autumn.

We will be holding a face-to-face item development workshop for members interested in writing questions for the theory exams in 2022. Anybody interested in attending please contact either physicsexams@svtgbi.org.uk **or** technologyexams@svtgbi.org.uk**.**

Practical Exam

No changes in process for practical exam. Please forward any queries regarding the process of practical exams or if you wish to volunteer as an External Examiner to the practical examination officers Laura Haworth and Hannah Williamson at practicalexam@svtgbi.org.uk.

Study Days

Fundamentals Study Day was held virtually on the 25th – 26th January 2021 with around 120 attendees over the 2 days. Revision day was cancelled due to Covid restrictions.

The dates for next year will be confirmed (Fundamentals likely January 2022 and Revision Day March/April 2022) and will be published on the website and advertised in the newsletter. Any queries or if you would like to volunteer as a tutor on the days please contact studydays@svtgbi.org.uk

CPD

No significant changes with the CPD process have taken place. Currently we have 258 Accredited Vascular Scientist members. 10% of all AVS members were audited as of end of membership year with 18 passed and 2 lapsed (6 exempted). There are 14 members who have insufficient rolling points total – please contact the CPD team if you are having difficulty with your CPD points cpd.avs@svtgbi.org.uk

Please ensure you have uploaded your certificate for Covid CPD points (worth 4 points) and checked that your rolling CPD total is up to date (30 points/3 years)

Education Committee

The Education Committee meets quarterly to organise and review the accreditation process for the SVT. If you wish to find out more about the committee or are considering joining, please contact edcom_chair@svtgbi.org.uk

Thank you to all the Education Committee members who volunteer their time to help run and maintain the SVT Accreditation process:

Amy Bolsworth, Asif Dilshad, Caroline Dainty, Davinder Virdee, Felicity Woodgate, Hannah Williamson, Heather Anderson, Helena Edlin, Laura Haworth, Ryan Ward, Sophie McDermott

Kind Regards,

Hannah Lines,

Education Committee Chair

Professional Standards Committee Report

I would like to use this forum to thank all current and recent members of the PSC for their support and input throughout this testing year. It has been difficult to conduct any useful meetings due to the nature of the work involved, however the committee have managed to update many of the Professional Performance Guidelines (PPGs) to date. This year the PSC were tasked with preparing the PPGs for public use and we are pleased to inform you that the recently updated PPGs are now also available on the public section of the SVT website. I would also like to thank the Website Secretary, Carlos Pinho, for his unwavering help in achieving this milestone. The PSC team are looking forward to continuing their work next year and we are aiming to review all the outstanding PPGs with a view to going public.

Any constructive comments or suggestion should be sent to the Chair of the Professional Standard Committee (PSC_chair@svtgbi.org.uk) and we will endeavour to address these at our quarterly meeting.

On Behalf of the PSC members; Alison Charig, Joanne Walker, Sophie Harrison, Eleanor Smith, Nikolas Sanoudos and Maria Morgan.

Best Wishes

Dr Kamran Modaresi

PSC Chair 2021 and SVT Vice President Elect 2021-2023

SVT Membership Secretary Report

As of September 24th 2021, the membership numbers have remained stable.

Currently there are the following figures:

Associate Members:	17
Ordinary Members:	206
SVT Accredited Members:	273
Honorary Members:	10
Total Membership Number:	**506**

We have been having some issues with the website and renewals system; however, this is being investigated and should be rectified and working efficiently shortly- so for those affected, we thank you for your patience.

Lynne McRae

Membership Secretary

SVT Treasury Report

Year Ending 31st August 2021

This report is subject to independent audit by accountant Bourne & Co and figures may change prior to submission to charities commission.

Account balances as 31st Aug 2021

Reserve account ..….....£14,6194.69

Current account ….....£26,579.41

Total Funds ….....£172,774.10

Current account

Opening balance (01.9.20).....£15,732.46

Closing balance ….....£26,579.41

Income.....£40,445.44

Expenditure £19,559.44

Reserve account

Opening balance (01.09.20).....£136,180.64

Transfer from reserve account..... £10,000.00

Closing balance ….....£146,194.69

Kind Regards,

Ben Freedman,

SVT Treasurer.

	Year end 31.08.2021
	Total Funds
	£
Receipts	
Annual General Meeting	5,000.00
Advertising	8,300.00
Examination, revision and study day fees	1,183.29
Practical exam fees	2,400.00
Membership fees	23,548.10
Miscellaneous income	-
Charitable donations	-
Bank interest received	14.05
Total receipts	**40,445.44**
Payments	
Annual General Meeting	1,417.93
Ann Donald memorial award	500.00
Education committee meetings	-
Journal access	2,588.51
Executive committee	1,425.26
Professional standards committee	476.24
Research committee	-
CASE expenses	1,835.00
Revision and study days	-
Practical examination fees	604.07
Newsletter	-
Postage, printing and stationery	1,591.68
Website / database administration	2,226.00
Insurance	713.32
Professional fees	1,350.00
Miscellaneous expenses	3.18
Sponsored research grants	2,475.50
Donation	300.00
Academy for Healthcare Science	-
Bank charges	2,052.75
Total payments	**19,559.44**
Net of payments	20,886.00
Cash funds last year end	151,888.10
Cash funds this year end	172,774.10

SVT Research Committee Report

SVT Research workshop

We have put together the Research workshop at this year's ASM. We aim to provide a taster to the various elements required to undertake a research project or to embark on a research career. This includes a Roadmap to Research; Essential statistics; Ethics and regulations; Funding tips and tricks; and Dissemination.

SVT Research Grants

To follow on from the workshop we are continuing to offer the SVT Research award to enable Vascular Scientists to conduct small-scale studies such as pilot or feasibility studies, with the hope that larger grants will be applied for at a later date. There is a total of £10,000 available per year, with a maximum of £4,000 per award.

There were two successful grants last year, but unfortunately there were no applications this year. We plan to open the 2022 window in the Jan 2022 and close at the end of March 2022.

The Journal of Vascular Societies of Great Britain & Ireland

A new vascular journal is being launched in by the vascular societies, VS, SVT, SVN and BACPR. We will be encouraging all SVT members to support this new journal by publishing their research. The SVT Research Committee can advise to help to get your SVT ASM abstracts ready for publication.

Watch out for more information in the near future.

The Vascular Priority Setting Partnership (PSP)

The work of the James Lind Alliance Vascular Priority Setting Partnership has been continuing in 2021, with SVT involvement. The questions by patients and healthcare professionals have been passed to the specific Special Interest Groups to further prioritise and take the research questions forward. The work will be published later this year, possibly in the new Journal of Vascular Societies of Great Britain & Ireland.

Thanks to Steve Rogers, Laura Scott, Yvonne Sensier, Nida Nadeem and Mari Murumets

Please contact us with any feedback or questions research@svtgbi.org.uk

Kind Regards,

Dr Richard Simpson,

Research Committee Chair

BMUS Report

This year has been a busy one virtually. BMUS implemented their Webinar Wednesday series that has seen huge success for both members and non-members.

This will be my final year as BMUS representative, I will really miss the lively BMUS team and wish them well in their joint endeavours. Tanyah Ewen, past president of the SVT, will be taking over the role and will no doubt do an excellent job with her vast experience.

This year, due to continued concerns over COVID, BMUS made the tough decision to cancel the face-to-face meeting and instead provide the educational content of the ASM meeting on-line over a series of weeks. This enables many more sonographers, radiologists and Clinical Vascular Scientists to access this excellent meeting.

You can register and pay for one session, or you can buy combinations of 4 or 8 sessions depending on what you like! Trainees look out for their Physics sessions!

Registration at www.ultrasound2021.org

Vascular Stream Monday 29th November 2021

This year the Vascular session aims to educate the Generalist, Vascular sonographer or Vascular Scientist on up-to-date protocols and guidance for scanning patients that have undergone or are about to undergo vascular intervention.

Starting with a talk on Fenestrated Endovascular Aortic repair grafts FEVAR; How are these grafts assessed, what is the surveillance protocol, tips on best technique and how to report your findings.

The next talk covers specialist scanning of the foot's arterial supply for assessment prior to ultra-distal vein bypass graft for foot salvage.

Following a similar theme our final talk will broadly cover the various types of bypass grafts and stents used to treat patients with Chronic Limb Ischaemia. What are the various bypass conduits routinely used for patients with CLI, what are their individual features, how they should be assessed, and the long-term protocol for surveillance of these bypass grafts.

Emma Waldegrave

BMUS representative 2021 & President Elect 2021-2023

Ultrasound 2021

Striving for Excellence

52nd Annual Scientific Meeting of the
British Medical Ultrasound Society

Online Conference

29th November-9th December 2021

Held over two weeks, this dynamic and interactive online conference offers high-quality education for all ultrasound specialties, with specific sessions for trainees and therapeutic ultrasound experts.

The programme of morning, afternoon and evening sessions offers flexibility for live participation and also gives registered delegates on-demand access for three months, until April 2022, meaning that the programme can be watched anytime and anywhere.

Alongside the sessions you'll be able to access a number of poster and proffered paper abstracts, and the 2021 Young Investigator Award competition. Additionally there is the opportunity for engagement with industry partners, other delegates/speakers and social networking.

BMUS

www.ultrasound2021.org

Presidents Report

It was a great honour to take over as SVT President back in November 2019, and I have been extremely proud to represent our society over these last two years. With the impact of Covid-19 still being felt, it has been another challenging year for us all, but I am immensely proud of the response of all SVT members during this difficult time. You have all done yourself and the profession proud. In years to come, when people ask what you did during the pandemic, you can all say you stood up and played your part in the country's efforts. Thank you.

I have really enjoyed my time as President of this great society for many reasons but mainly because I have got to work with so many great friends on the Executive Committee and sub committees. Their tireless work has helped the society and in particularly myself during these two years and I am extremely grateful for all their help.

The SVT have always worked very closely with the Vascular Society (VS) particularly when it comes to organising the Vascular Societies Annual meeting. For this I am very grateful to VS President Michael Jenkins and the VS council for their support. I would also like to thank both Louise Collins and Francesca Shephard for their invaluable administrative support and help organising this conference. This year also saw the Vascular Societies working together to produce an updated POVS document (Provision of Vascular Services). This document was a real collaboration between all the vascular societies and I would like to thank Marcus Brooks (VS Secretary) and everyone else on the writing group for their help in producing this document.

Following the difficult decision last year to pause theory and practical exams during the peak of the pandemic it was great to see so many trainees taking part in both theory and practical exams this year. Good luck to all trainees who sat their exams this year and congratulations to all newly qualified AVS.

The SVT continue to work in partnership with Inteleos to produce the SVT theory exams. Notable recent advances in the theory exams include the ability for trainees to sit the theory exams from their own home via online proctoring. Many thanks to all in the education committee and our friends across the pond in Inteleos for all their help in advancing the assessment and testing of our trainees.

In order to align the SVT accreditation process more closely with the AHCS equivalence pathway we have been planning on reviewing the accreditation syllabus to include more research. Due to Covid-19 we have not progressed this as far as expected but hope to have a firmer plan ready for 2022-23.

The SVT Research/Innovation award is to enable Vascular Scientists to conduct small-scale studies such as pilot or feasibility studies, with the hope that larger grants will be applied for at a later date. There is a total of £10,000 available per year, with a maximum of £4,000 per award. Many SVT members have already benefitted from these grants and we encourage all members to utilise this if they have any research/audits they wish to perform. Along with the grants the SVT Research Committee also has information and guidance available on the website for members wishing to write research proposals and grants, plus as a member of the SVT you gain free access to the European Journal for Vascular Surgery. Many thanks to Richard Simpson (Research Committee Chair) and his team for all the work they have done this year on the research workshop which I am sure will be a great success and extremely useful for our members.

As SVT president I sit on a number of committees representing the SVT members. These include the Academy of Healthcare Scientists (AHCS), Consortium for the Accreditation of Sonographic Education (CASE) and the British Medical Ultrasound Society (BMUS). I would like to thank all the above societies for being welcoming and for their continued work with the SVT to progress the education, training and national recognition of our profession.

I would like to take this opportunity to thank everyone who has worked with me on the Executive Committee and sub-committees over my tenure as President. At a time when our clinical work has had to take precedence and our time with our families precious it has been incredible to see the dedication to the society from so many people in volunteering their time, thank you all so much for everything you have done for the society.

Special thanks go to Domonic Foy, Sara Causley and Carole Tennison who are leaving the Executive Committee. Dom and Sara have been on the Exec Committee in various positions for a number of years both being past Presidents along the way. The Exec Committee and the SVT will miss them greatly but thank them for their years of service. Carole although only being on the committee for a couple of years will also be sorely missed as conference secretary. We wish you all the best on your future plans.

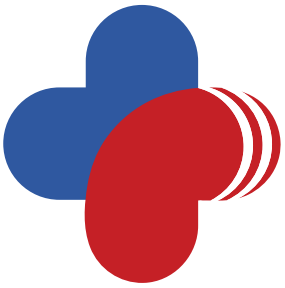
So as my term of Presidency comes to a close, I would like to wish Emma Waldergrave all the best as she takes the reigns of SVT president. I have no doubt she will do an amazing job as she is already doing better than I did as vice president. So, it is my great pleasure to introduce your next SVT President Emma Waldergrave and the new Vice President Kamran Modaresi who together will guide the society over the next few years.

Many Thanks,

Lee Smith

President 2019-2021

NOTES



THE SOCIETY FOR
VASCULAR TECHNOLOGY OF
GREAT BRITAIN AND IRELAND

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