Advancing non-invasive vascular diagnostic services by promoting training and research in Vascular Science.

CSVS

THE COLLEGE AND SOCIETY
FOR CLINICAL VASCULAR SCIENCE
Great Britain and Ireland

SPRING
2025

IN THIS ISSUE

President's Message

A belated happy new you to you all. I am pleased to inform you that our new website is now up and running with the new exam portal as well as the new financial system incorporated into the system. The new website address is https://www.csvs.org.uk. Please look and browse the system. A lot will seem familiar but the behind the system software is all new and incorporates many changes.

We are pleased to inform you that the CSVS research committee are arranging a research study day to take place in June in Coventry. Please be quick as places are limited for this event. The CSVS membership have also been offered free registration for the FYA congress in London (27th February to 1st of March). Please take advantage of these upcoming events. We are fortunate to have many relevant study days and meeting throughout the year with associated learning and CPD.

We have once again been asked to support the CX Symposium (April 23-25th). We are hoping to arrange for reduced registration fees for our membership. This is an excellent event for all to attend and I look forward to seeing some of you there. Please look out for further updates. We shall also have representation at the Venous Forum Meeting at the RSM in June. The programme is now available online.

Following on from our successful Vascular Access Study Day at King's College Hospital, we are in the process of arranging a further study day for later in the year with date and topic to be confirmed. Please look out for further information in our social media channels.

We had a successful ASM in Brighton last year with a newsletter article in this edition for those of you who couldn't attend. The Ultrasound room was a hit with our membership as well as our affiliated societies and we hope to replicate this for next year's event in Hull. A big thank you to our Conference team Klaus Bond and Nazia Saeed for the inordinate administrative duties involved. I would also like to thank Hannah Williamson, Louis Alexander, and the Brighton team for supporting the Tuesday study day. Finally, full appreciation must go to the whole of the Executive Committee team for all of the background work, chairing sessions, setting up the rooms and supporting the whole process. It is definitely a group effort.

The CSVS stream at BMUS in Coventry was yet another great event, successfully arranged by our very own Tanyah Ewen with the added bonus of the Donald McVicar Brown lecture delivered to a packed house by Dr Colin Dean. A fantastic end to a year of learning. I personally enjoyed this event and have already penciled in the dates for the Harrogate meeting next year.

Enjoy the newsletter and please look out for further updates on our website.

Dr Kamran Modaresi BSc (Hons), PhD, AVS, FCVS
President - The College and Society for Clinical Vascular Science

CASE STUDY:

Case-Based Discussion on the delayed diagnosis of Eosinophilic Granulomatosis with Polyangiitis and how clinical vascular scientists can aid in the diagnosis of rare conditions

Louis Alexander, BSc (Hons), MSc - Clinical Vascular Scientist HCPC AVS

Introduction

Eosinophilic Granulomatosis with Polyangiitis (EGPA), formerly known as Churg-Strauss Syndrome, is a rare systemic necrotising vasculitis characterised by eosinophilic inflammation of the small to medium-sized vessels. EGPA typically presents in three phases: a prodromal phase with allergic features such as asthma and allergic rhinitis, an eosinophilic phase with peripheral blood eosinophilia and eosinophilic tissue infiltration, and a vasculitis phase with systemic necrotising vasculitis.[1,2] The pathogenesis of EGPA remains poorly understood, but it is believed to involve complex interactions between genetic predisposition, environmental triggers, and immune system dysregulation.[3] EGPA poses significant diagnostic challenges for clinicians due to its rarity and varied presentation. In this case-based discussion, we present the clinical journey of a patient diagnosed with EGPA, detailing the onset of symptoms and challenges in receiving a final diagnosis. This case emphasises the importance of adopting a multidisciplinary approach and promptly recognising the complexity of EGPA to enhance patient management and improve prognosis.

Patient Presentation and Timeline of Events

▪ 02/07/24: GP and A&E Visit

Fig 1. Inflamed Temporal Arteries.

A 42-year-old caucasian female presented to her GP with a right-sided headache, temporal pain, and right shoulder pain. The GP referred her to A&E. The clinical impression at A&E was that the patient was suffering from a tension headache, with joint pain attributed to an underlying history of fibromyalgia. Given the patient's age (under 50 years old), no relevant family history and normal inflammatory markers (ESR 5 mm/hr, CRP <1 mg/L), an alternative diagnosis of Giant Cell Arteritis (GCA) was considered unlikely. The patient was discharged without steroids and managed with paracetamol and ibuprofen.

▪ 11/09/24: GP Visit

The patient returned to her GP two months later with heightened anxiety over her progressive symptoms. This time, the GP reported, "veins on temples are larger...thick, tortuous vein over right temple...suggestive of a varicose vein...I have never seen this before..." *(Fig 1)*. Additionally, the GP documented that the extremities, particularly the right hand, were cold and tender. The GP reported significant concern for the symptomatic right hand and made a referral to vascular surgery.

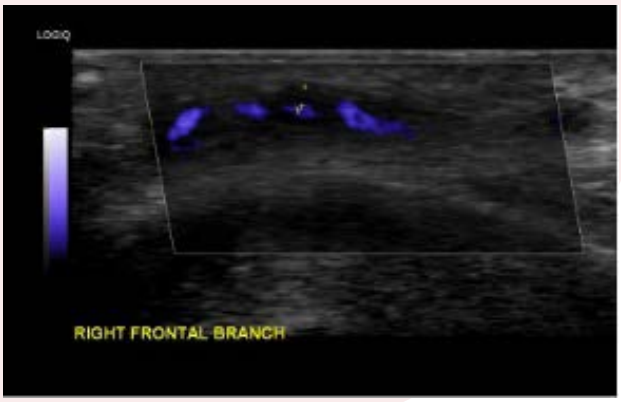
▪ 12/10/24: Vascular Referral

A month later, the vascular surgical team actioned the referral. Due to persistent duskiness and possible ischemic changes to the right hand, they requested an urgent right upper limb arterial duplex.

▪ 21/10/24: Vascular Ultrasound

The patient attended the vascular lab. During the history-taking process, the patient reported experiencing scalp tenderness and itchiness. On closer examination, the Clinical Vascular Scientist (CVS) observed visually palpable temporal

arteries. In addition to the right upper limb arterial duplex, a comprehensive scan of the temporal arteries was also conducted. The upper limb scan identified arterial thrombus in the ulnar artery but adequate compensatory blood flow in the ipsilateral radial and common palmar digital arteries *(Fig 5 and 6)*. The temporal scan revealed segments of incompressibility and hypoechoic thickening of the superficial, frontal and parietal temporal arteries, indicative of a positive halo sign *(Fig 2, 3 and 4)*. Consequently, the CVS consulted the Rheumatology team of these findings. Due to their suspicion of medium-to-large vessel vasculitis, a PET-CT scan and a temporal artery biopsy were requested.



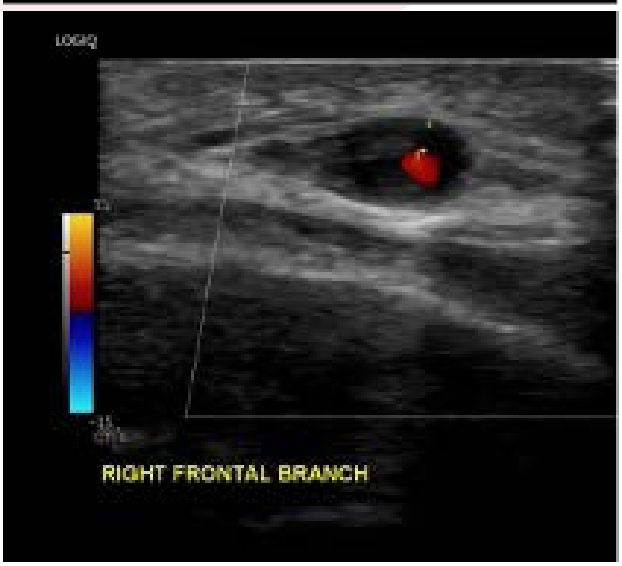
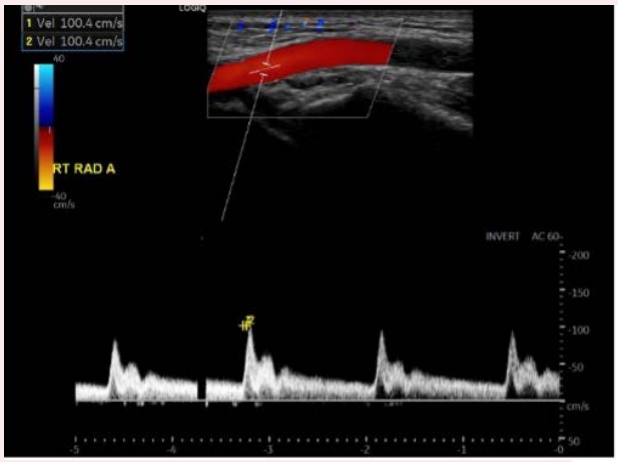


Fig 2, 3 and 4. Right Frontal Branch of the Temporal Artery in both transverse and longitudinal plane, visualised with a high-frequency hockey stick probe (6-24 MHz). The image demonstrates a thickened incompressible hypoechoic ring around the patent lumen captured with Power Doppler Imaging (PDI), Microvascular Imaging (MVI) and Colour Doppler.



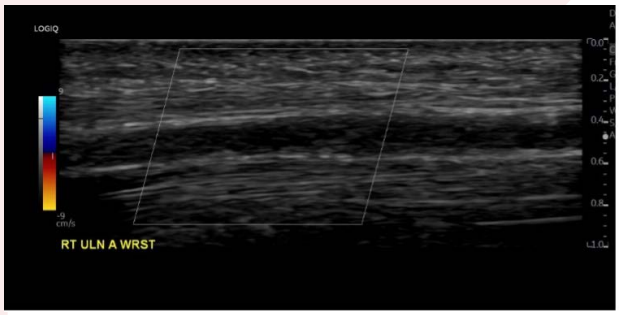


Fig 5 and 6. The right patent radial artery and occluded ulnar artery seen in a longitudinal plane.

▪ 28/10/24: PET-CT

A week later, the patient received a PET-CT scan *(fig 7 and 8)*. The clinical impression was "No specific evidence of acute inflammation due to large vessel vasculitis...". Given the patient's symptoms and ultrasound findings, the unremarkable PET-CT results were unexpected as they did not align with the suspicion of large vessel vasculitis.

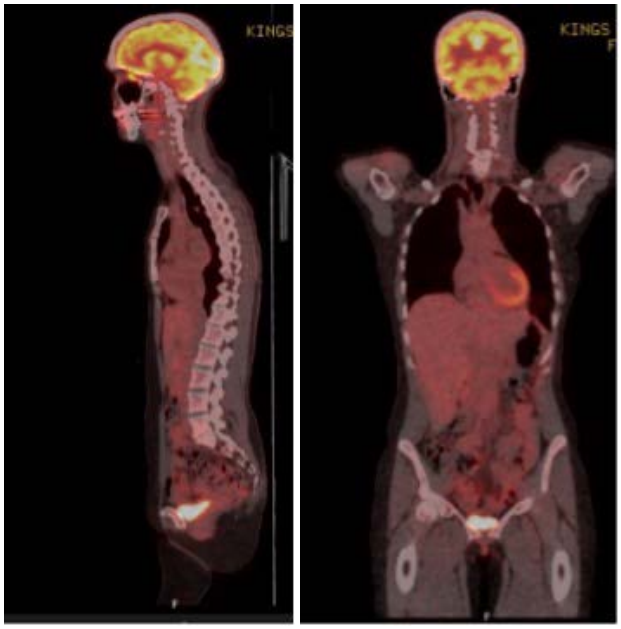


Fig 7 and 8. Sagittal and Coronal Plane of PET-CT scan.

▪ 31/10/24-06/11/24: Temporal Artery Biopsy

The patient attended ophthalmology three days later and received a temporal artery biopsy. Histology reported the results a week later, revealing acute-on-chronic eosinophilic arteritis, noting that "the features are somewhat unusual, and the possibility of a systemic vasculitis should be considered".

▪ 07/11/24: Rheumatology Consultation

One hundred and twenty-eight days after the patient's initial visit to her GP, she returned to the Rheumatology team. She was finally given a diagnosis of EGPA and immediately started on a regimen of steroids.

Discussion

Vasculitis is often misunderstood and under diagnosed in community medicine and A&E settings due to symptoms being non-specific and varying depending on the size and location of the affected vessels. Common symptoms such as fever, weight loss, fatigue, and joint pain are frequently attributed to more common illnesses like infections or autoimmune diseases.[1] Additionally, the incidence of vasculitis is relatively low, with the prevalence of EGPA being 45.6 per 1,000,000.6. This lack of exposure and awareness can lead to a lower index of suspicion.[1]

The diagnostic challenge is further compounded by the absence of specific laboratory tests. Monach PA. (2014) reported that limited studies have demonstrated biomarkers with sufficient sensitivity or specificity to warrant clinical consideration.[14] Commonly employed biomarkers, such as WBC/eosinophils, ESR, and CRP, are non-specific for EGPA and can be influenced by various conditions or medications.[1, 10, 11] For instance, in this case study, despite the patient's active disease process, as evidenced by the elevated eosinophil count *(Figure 10)* and histology findings, the ESR and CRP were relatively normal. Furthermore, it could be argued that the negative inflammatory biomarkers influenced the decision-making process during the patient's initial visit to the A&E, and ultimately delaying the correct diagnosis.

The combination of ambiguous symptoms, the low prevalence of the disease, and non-specific laboratory tests can cause significant delays in reaching an accurate diagnosis. A study by Sreih AG et al. (2021) found that the median time to diagnose vasculitis, including EGPA, is seven months, with 73% of patients initially receiving an incorrect diagnosis *(Fig 9)*.[5] This aligns with the findings in this case study, where the patient experienced symptoms for nine months before receiving a diagnosis, with 128 days since their initial visit to the GP.

Delayed diagnoses can lead to disease progression and potentially severe complications. Therefore, recognizing EGPA promptly, along with timely treatment, is crucial for improving prognosis and life expectancy. This importance is emphasized in a 20-year retrospective study conducted by F. Moosig et al. (2013).[13] The study observed over 100 EGPA patients and found that expert disease management was associated with increased life expectancy and reduced disease severity. The study concluded healthcare professionals should utilize a combination of clinical judgment, patient history, and advanced imaging techniques to achieve an accurate diagnosis.

Advanced imaging techniques, such as PET-CT scans, show test sensitivity comparable to ultrasound and temporal artery biopsy. Therefore, it was unusual to see no evidence of metabolic activity in this case despite the presence of an active disease process.[7] Similarly, Khalid et al. (2020) reported two instances where patients with vasculitis tested negative on PET-CT but had vasculitis confirmed through temporal

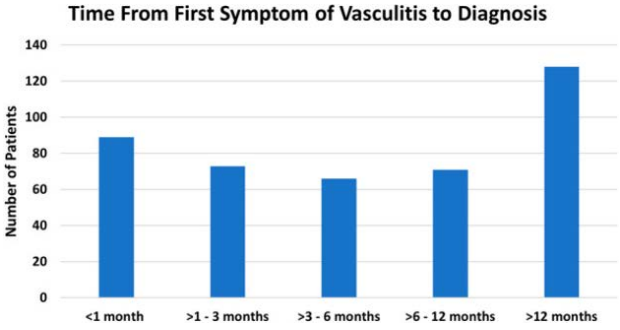


Fig 9. Time from the first symptom of vasculitis to diagnosis (Sreih AG. et al., 2021).

Component Ref Range & Units	1 mo ago (25/10/24)	1 mo ago (21/10/24)	5 mo ago (2/7/24)	1 yr ago (18/10/23)
White Cell Count 2.9 - 9.6 10*9/L	13.4 **High**	10.2 **High**	10.1 R	13.5 **High** R
Eosinophils 0.00 - 0.40 10*9/L	0.83 **High**	0.90 **High**	0.86 **High** R	0.53 **High** R

Fig 10. Laboratory Results. Elevated White Cell and Eosinophil Count within the preceding year before diagnosis.

artery biopsies.[8] In those cases, inflammatory markers were elevated, whereas in this case study, the patient's inflammatory markers remained within normal limits. Despite the invasiveness, cases like this one highlight the need for a tissue diagnosis when appropriate.

This case study also emphasises the pivotal role CVS play in diagnosing rare vascular conditions such as EGPA and how evolving ultrasound technology can assist in reaching a diagnosis. Given their exposure to a relatively high incidence of such cases, they are adept at recognising subtle symptoms and possess the clinical judgment to contribute significantly to a diagnosis. In this case, the CVS identified key symptoms of vasculitis, including, arterial thrombus, temporal inflammation, and scalp pain—symptoms that can be overlooked or not recognised in community and emergency settings. Conversely, recent reports suggest thromboembolic events should be considered as a definitive character trait of this condition.[4] However, the literature has primarily focused on the association between venous thromboembolism and EGPA, with limited evidence suggesting a connection to an arterial manifestation, as seen in this case study. This gap in knowledge underscores a crucial area for future research where CVS can have a significant impact.[4,9]

Moreover, vascular ultrasound proved to have significant advantages over other diagnostic tests that the patient underwent. Ultrasound offered real-time results without delay in interpretation or reporting, enabling the CVS to immediately recognise the findings and promptly refer the patient to the Rheumatology team. Evolving ultrasound technology, including high-frequency linear probes, PDI, and MVI, improves the visualisation of small vessels, thin channels of patency and areas of inflammation.

Conclusion

This case study highlights the challenges in diagnosing EGPA. It points out that insufficient clinical exposure can delay diagnosing this rare form of vasculitis. Additionally, it underscores the importance of a multidisciplinary approach in the diagnostic process and illustrates the positive impact that CVS have on patient care. By raising awareness and educating primary care providers and emergency medical staff about the signs and symptoms of vasculitis, the medical community can improve early recognition and intervention, ultimately enhancing patient outcomes.

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Bitesize Research:
Giant Cell Arteritis (GCA)

Written by Dr Nida Nadeem, Vascular Laboratory, King's College Hospital, London

INTRODUCTION:

Giant cell arteritis (GCA) is a chronic vasculitis that primary affects medium to large arteries. The hallmark of GCA is inflammation of the arterial wall leading to vessel narrowing, ischaemia and complications such as vision loss or stroke. Early diagnosis and prompt treatment are essential to prevent irreversible damage. Laboratory findings typically demonstrate elevated inflammatory markers, however they can be non-specific and a definite diagnosis often relies on biopsy or imaging. In recent years ultrasound has emerged as a valuable diagnostic tool for GCA particularly with evaluation of the temporal and axillary arteries. High resolution ultrasound can detect characteristic findings such as:

- Halo sign
- Compression sign
- Stenosis or occlusion

Despite its growing role much research is still needed to optimise ultrasound in GCA diagnosis. Key areas of research include standardisation of protocols, interpretation criteria, operator training and how best to utilise its application in clinical practice.

Paper 1:

Dejaco C, Ramiro S, Bond M, et al. EULAR RECOMMENDATIONS FOR THE USE OF IMAGING IN LARGE VESSEL VASCULITIS IN CLINICAL PRACTICE: 2023 UPDATE. Annals of the Rheumatic Diseases 2024;83:741-751.

Summary:

This paper presents the 2023 update of the European Alliance of Associations for Rheumatology (EULAR) recommendations for the use of imaging in large vessel vasculitis, specifically GCA and Takayasu arteritis (TAK). The key updates are:

- Recommendation of ultrasound as the first-line imaging test for suspected GCA over temporal artery biopsy.
- Early imaging but also early treatment in suspected cases of GCA in situations where imaging cannot be conducted quickly.
- The use of MRI as the preferred imaging modality for TAK

Pros:

- Evidence-Based: The recommendations are based on a comprehensive review of recent studies and expert consensus, ensuring they are up-to-date and scientifically sound.
- The recommendations offer practical guidance on the preferred imaging techniques for different clinical scenarios, aiding in the diagnosis and management of vasculitis diseases.
- The inclusion of patient representatives in the task force ensures that the recommendations also consider patient perspectives and needs.

Cons:

- The recommendations may be challenging to implement in areas with limited access to advanced imaging technologies and trained specialists.

Impact on practice:

- The new recommendation of using ultrasound as first line imaging for GCA will likely drive specialised training for vascular scientists and with that resource allocation.
- These guidelines propose a standardised approach to using imaging for vasculitis diseases across all healthcare settings.
- Emphasis on early imaging tests may lead to quicker diagnosis and treatment, potentially reducing the risk of complications like blindness in GCA.

Paper 2:

López Gloria K, Rodríguez-Merlos P, Serrano-Benavente B, et al. ULTRASOUND INTIMA MEDIA THICKNESS CUT-OFF VALUES FOR CRANIAL AND EXTRACRANIAL ARTERIES IN PATIENTS WITH GIANT CELL ARTERITIS. Annals of the Rheumatic Diseases 2022;81:1423-1424.

Summary:

This retrospective study aimed to establish optimal intima media thickness (IMT) cut-off values for cranial and extra-cranial vessels to improve the diagnostic accuracy of ultrasound in patients suspected with GCA.

157 patients were referred to a fast track GCA clinic where bilateral ultrasound examination of the cranial (temporal arteries) and extracranial arteries (carotid, subclavian and axillary) were performed. Clinical confirmation of GCA by the referring rheumatologist after 6 months was the diagnostic gold standard. Receiver operating characteristic (ROC) analysis was used to identify IMT cut off values.

IMT cut-off values with high diagnostic accuracy to discriminate between patients with and without GCA are as follows:

- Common superficial temporal artery: 0.44mm
- Frontal branch: 0.34 mm
- Parietal branch: 0.36 mm
- Carotid artery: 1.1mm
- Subclavian and axillary arteries: 1mm

Pros:

- Proposed very precise IMT cut-off values which improved diagnostic precision of ultrasound GCA (sensitivity and specificity were high).
- Aligns with EULAR recommendations for fast-track imaging for GCA.
- Included a relatively decent sample size and a detailed ultrasound protocol for reliability and reproducibility.

Cons:

- High potential for bias from the retrospective design as the sonographer and clinicians were not blinded.
- High prevalence of steroid use among the participants before ultrasound may have influenced results.

Impact on practice:

- By proposing actionable IMT cut-off values, these may be implemented in ultrasound protocols across centres, thus enhancing the accuracy of GCA diagnosis.
- Supports a reduced reliance on invasive biopsy procedures.
- Highlights the importance of including extracranial vessels, particularly in inconclusive cranial artery cases.

Paper 3:

Oshinsky C, Pollock PS, Sacksen I, et al. THE COMMON CAROTID ARTERY IN THE ULTRASOUND EVALUATION OF GIANT CELL ARTERITIS. J Clin Rheumatol. 2024 Sep 1;30(6):243-246.

Summary:

This study evaluates the role of including the CCA in the vascular ultrasound protocol for diagnosing GCA. It compared diagnostic accuracy when adding CCA imaging to the standard evaluation of temporal and axillary arteries. The study analysed 57 patients with GCA and 86 without, using two IMT cutoffs for CCA: 1.0mm and 1.5mm.

Key findings:

- Adding the CCA IMT cut off of >1.0 mm increased sensitivity but significantly decreased specificity due to high false positive rate.
- Using the higher cut off of 1.5mm improved sensitivity further but still had low specificity.
- The ROC curve was 0.398 indicative of poor discriminatory power of CCA IMT measurements for GCA diagnosis.

Pros:

- Used trained vascular sonographers who underwent a robust training regime with European experts.

Cons:

- Unable to validate ultrasound findings against biopsy because very few patients underwent this procedure. According to this paper biopsy is the traditional gold standard.

Impact on practice:

This study recommends excluding CCA from vascular ultrasound protocols to avoid high rates of false positives and unnecessary treatments with steroids and immunosuppressant drugs.

Paper 4:

Haaversen ACB, Brekke LK, Kermani TA, et al. VASCULAR ULTRASOUND AS A FOLLOW-UP TOOL IN PATIENTS WITH GIANT CELL ARTERITIS: A PROSPECTIVE OBSERVATIONAL COHORT STUDY. Front Med (Lausanne). 2024 Jul 29;11:1436707.

Summary:

132 patients with GCA were prospectively followed with scheduled visits to include clinical assessment, ultrasound examination and CRP measurements.

The researchers aimed to:

1. Assess GCA relapse rates.
2. Evaluate the usefulness of ultrasound as a monitoring tool.
3. Develop a composite GCA disease activity score (GCAS) incorporating clinical symptoms, ultrasound findings and laboratory markers.

Pros:

- Prospective design and long-term follow-up provide robust data on the utility of ultrasound in monitoring GCA.
- Conducted in an outpatient clinic, the study's findings are applicable to everyday clinical practice.
- The development of a composite GCA score offers a more comprehensive approach to assessing disease activity.

Cons:

- The moderate sensitivity and specificity of ultrasound limit its reliability as a sole monitoring tool.
- The absence of a universally accepted gold standard for defining relapse in GCA complicates the interpretation of the study's findings.

Impact on practice:

- The study supports the use of ultrasound as part of a multi-modal approach to monitor GCA relapse.
- The proposed GCAS could become a valuable tool in clinical practice, offering a more nuanced assessment of disease activity and may inform future guidelines on GCA management.

AVS Accreditation

Huge congratulations to these members for successfully passing their AVS Exams

- Emily Morgan
- Emma Quilty

The Importance of Indemnity Insurance for Vascular Scientists Working in the NHS: Safeguarding Patient Safety and Professional Integrity

Background

The National Health Service (NHS) in the UK spends a significant amount of money annually on compensation for medical negligence claims. The latest figures published by NHS Resolution in July 2024, show that the NHS paid £2.8 billion over the last financial year on legal costs and settlements related to claims of medical malpractice or negligence. The costs to the NHS have been steadily rising due to the increasing number of claims and the rising cost of settlements, especially those involving long-term care or severe outcomes for patients.

Vascular ultrasound is an essential diagnostic imaging method used in the NHS, particularly for assessing the health of patients' veins and arteries. Vascular scientists or other healthcare professionals, such as vascular surgeons who perform ultrasound scans for diagnosing vascular disease play a critical role in patient care. However, these professionals are at risk of litigation if a misdiagnosis occurs or if an error happens during the examination process. For example, if a vascular scientist fails to identify a condition such as a deep vein thrombosis, which then leads to further complications or injury, the NHS may be held liable for negligence. Additionally, if there is a mistake in documenting or interpreting the ultrasound images of any vascular ultrasound assessment, this could also lead to negligence claims. Even though the ultrasound procedure itself unlikely to cause harm, there's still potential for human error, whether that's from technical mistakes, incorrect interpretations, or failure to act upon the results in a timely manner.

Given this, indemnity insurance is incredibly important for vascular scientists and others performing diagnostic vascular ultrasound in the NHS. This insurance provides legal protection and financial coverage in the event of a claim of negligence, covering legal fees, compensation costs, and any settlement. Without appropriate indemnity insurance, healthcare professionals may face personal financial risks in addition to the professional and emotional strain of dealing with litigation. It's also a requirement for healthcare professionals to have indemnity insurance to practice ultrasound scanning in the NHS, as it ensures protection for both the professional and the institution in case of errors or claims of negligence.

Understanding Indemnity Insurance

The UK government made indemnity insurance mandatory in 2014, requiring healthcare professionals performing diagnostic ultrasound examinations within the NHS to hold their own personal indemnity cover. This legislation was introduced to ensure that patients are protected and that healthcare professionals are financially shielded in the event of a clinical error. Prior to this, indemnity cover for NHS professionals was often provided solely by their employers. However, the increasing complexity and specialization of medical practices, alongside an increase in the frequency of legal claims, highlighted the need for personal indemnity. By making indemnity insurance mandatory, the government aimed to:

- **Protect patients** by ensuring professionals are accountable and insured for any harm caused.
- **Ensure adequate coverage** for professionals operating within their fields, even when working outside of NHS duties.
- **Reduce the financial burden** on NHS trusts, which may otherwise have been liable for additional claims.

Indemnity insurance provides protection to healthcare professionals in the event that a patient suffers harm as a result of the services they provide, such as misdiagnosis in a carotid ultrasound scan for a patient with suspected transient ischemic attach (TIA). In essence, this type of insurance covers the legal costs and compensation claims that may arise if a mistake is made during a diagnostic clinical vascular ultrasound procedure. For healthcare professionals such as vascular scientists, or any other healthcare professional working in the NHS, who undertake highly specialised ultrasound scans to assess for vascular conditions, such as carotid artery disease, having adequate indemnity insurance is not just a precaution, it's a legal necessity.

Why Having Indemnity Insurance is Essential for Vascular Scientists

Even though many NHS hospitals and trusts offer cover for their employees, independent indemnity insurance is still crucial for all healthcare staff, including vascular scientists performing diagnostic vascular ultrasound examinations. Here's why:

1. Personal Protection Against Claims: While NHS employers typically provide indemnity cover, this protection often only extends to the scope of duties as defined by the employer. If a vascular scientist, or any other healthcare professional performing ultrasound scans without having the necessary training or expertise risk violating the NHS indemnity policy by undertaking ultrasound scanning practice beyond the professional's defined role and responsibilities. Consequently, if a claim arises from a mistake during a vascular ultrasound scan performed outside of their NHS duties, the individual professional, such as a vascular scientist, could be personally liable, and having indemnity insurance mitigates such events. It is important to remember that some healthcare professionals undertaking vascular ultrasound examinations in the NHS may have obtained training outside the UK and perform ultrasound scans without belonging to a professional Body, such as HCPC or GMC (this is particularly relevant if someone is a trained doctor in another country but is not registered with GMC). As such, it is the responsibility of those individuals to check if the NHS employer's cover is sufficient for personal indemnity protection, ensuring comprehensive coverage for all ultrasound scanning activities they may undertake in the NHS.

2. Coverage for Non-NHS Work: Many vascular scientists may also undertake work in private healthcare settings, which does not typically fall under their NHS indemnity cover. It is the responsibility of those individuals to check with the indemnity insurance provider about the level of cover they provide to determine if their private work is covered by the NHS indemnity cover. If not, a separate policy is required, and it is important to clarify the level of cover provided or risk not being covered if a negligence claim arises from private practice.

3. Peace of Mind and Legal Support: Indemnity insurance provides healthcare professionals with not just financial protection, but also legal support in the event of a claim. A claim of medical negligence or malpractice, even if ultimately unfounded, can be stressful and time-consuming. Indemnity insurance ensures that professionals are not left to face these challenges alone and can access the resources needed to navigate any legal or regulatory issues that arise.

4. Professional Integrity: Having indemnity insurance underscores the professional integrity of vascular scientists working in the NHS by demonstrating their commitment to ethical practice and patient safety. Indemnity insurance ensures that they are financially protected in the event of a negligence claim, which is crucial for maintaining trust with patients and colleagues. By securing this insurance, vascular scientists show that they take their responsibilities seriously and are prepared to be accountable for their actions. This proactive approach not only safeguards their professional reputation but also aligns with the ethical standards expected in healthcare. It highlights their dedication to providing high-quality care and their willingness to adhere to best practices, even in challenging situations. Ultimately, having indemnity insurance reflects a deep sense of responsibility and professionalism, reinforcing the trust that patients and the healthcare system place in them

Training, Competence, and Legal Responsibility

It is imperative that healthcare professionals, including vascular scientists, only perform ultrasound examinations in areas where they have received proper training and certification. Ultrasound imaging requires high levels of expertise to ensure accurate diagnoses and to minimize the risk of errors. Healthcare professionals must be well-versed in interpreting images,

recognizing pathologies, and making sound clinical judgments based on ultrasound findings. Performing diagnostic ultrasound scans in areas outside one's scope of training or competence could have serious consequences for both the patient and the professional. Not only could incorrect diagnoses lead to delayed or inappropriate treatment, but the individual could also face significant legal repercussions if an error occurs. Therefore, it is essential that vascular scientists—like all healthcare professionals—maintain a high level of competence and, where necessary, undertake continuous professional development (CPD) to keep their skills up-to-date.

Alongside proper training, appropriate indemnity insurance ensures that healthcare professionals are legally protected while practicing their skills. It is important to understand that indemnity insurance is not just about safeguarding against negligence, it's about providing protection for all healthcare services that professionals offer, even when their actions are based on the highest level of clinical expertise.

Where Can Vascular Scientists Get Indemnity Insurance?

For vascular scientists looking for indemnity insurance, one reputable source is the Society of Radiographers (SoR), which offers professional indemnity insurance to its members. Vascular scientists with recognised educational pathways can become SoR members. By becoming a member, vascular scientists gain access to comprehensive cover that suits both their NHS and private work – though the insurance provided must be informed of intention to scan in private practice. Other professional organisations and insurance providers also offer indemnity insurance for healthcare workers, and it's worth shopping around to find the best coverage based on specific professional needs. However, professional societies like the Society of Radiographers are often the best place to start for reliable advice and protection tailored to the field.

Conclusion

Indemnity insurance is not merely an optional safety net for vascular scientists or other healthcare professionals performing ultrasound scans—it's an essential aspect of modern clinical practice. Whether working within the NHS or in a private capacity, having appropriate indemnity insurance ensures that vascular scientists are protected from the risks associated with clinical practice, including negligence claims. By understanding the legal and practical importance of indemnity insurance, vascular scientists can continue to focus on their vital work in diagnosing vascular conditions with confidence, knowing they are protected, both legally and financially and maintain professional integrity whilst protecting patients.

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The Vascular Societies' Annual Scientific Meeting in Brighton 2024

Day One

The day got off to a very delayed start due to adverse weather, which was closely followed by an evacuation due to a fire alarm, however despite this, it did not stop the insightful and informative sessions throughout the day. After arriving at the conference and heading straight to the vascular access talk by Ben Freedman (Chief CVS, King's College Hospital), I learnt about the importance of our roles as vascular scientists in both the planning of fistula placement, and post procedure duplex findings for our dialysis patients. I found the discussion regarding the use of a tourniquet during pre-fistula mapping particularly interesting and is something that my own vascular lab may go on to incorporate. The fistula hands-on workshop set up next door in the Duke's Suite with patient volunteers which was led by Louis Alexander (CVS, Brighton and Sussex University Hospital) and other vascular scientists was very useful.

After this, it was time for a coffee break in the exhibition hall where many exciting companies held their stalls for new and innovative equipment. I spent some time talking with BioMonde who showed me some examples of their incredible larvae used for wound healing. It was then time for another talk, and I headed down to the Ambassador room for the 'Varied roles in limb loss' discussion, which gave great insight into the multi-disciplinary roles involved in the care of amputees. This really put into perspective the hard work and dedication these healthcare professionals give to these patients and the extent to which an amputation can change a person's life.

Just before lunch, I wanted to spend some more time in the ultrasound room where there were some fantastic machines, one that stood out was the portable Mindray probe which can display an image on your phone. I also spent some time with the Siemens team and found their machine to be excellent in terms of usability and image quality.

After lunch, I went along to the trainee breakout session where one of my good friends, Max Bitterlin (CSVS Trainee Representative and Trainee STP Clinical Vascular Scientist, University Hospitals Bristol and Weston) the new trainee representative for the CSVS, gave us a fantastic presentation on the two current pathways to becoming a vascular scientist. This included the typical content of the theory exams and a summary of the new system in which they are performed. While most people in the room were STP trainees, Max broke down the CSVS accreditation pathway clearly and allowed feedback from all in the room for those planning on accreditation. We were then given a great practical demonstration by Hannah Williamson (Lead CVS and CSVS Education Committee) and Shannon Halliwell (Senior CVS, Bristol Hospital), who fantastically acted out a typical practical exam. I found this talk and demonstration particularly useful as someone approaching this stage in their training and would like to see it repeated for future trainees.

Our day concluded with a live comedy show—an evening of fantastic entertainment organised by the Circulation Foundation and Vascular Society to support charity. Later, I joined the drinks at The Shelter Hall, marking the start of the next few days filled with presentations, networking, demonstrations, and fun.

Katie Lees
Trainee Clinical Vascular Scientist (STP)
Barts Health NHS Trust

Day Two

After a warm by the CSVS president Dr Kamran Modaresi, the morning kicked off with a series of scientific abstracts. This year's prize winner was Dr Matthew Bartlett (Research Lead, Clinical Vascular Scientist, Royal Free Hospital). Dr Bartlett's talk was captivating from the moment it started. His study provided insights into how neointimal hyperplasia (NIH), a frequent complication after fistula formation, can be detected through ultrasound-based turbulence intensity ratios to better predict haemodynamically significant NIH.

After hearing all the interesting ultrasound cases in the morning session, the afternoon's Guest Speaker, Mr. Dominic P.J. Howard, Consultant Vascular Surgeon at Oxford University Hospitals, delivered an insightful lecture on carotid webs (CWs) and near occlusions in relation to stroke risk. Highlighting the under-recognition of CWs, he emphasised the need for greater awareness, particularly in young stroke patients. He clarified the distinction between CWs and carotid dissections, noting that while dissections occur near the skull base, CWs are localised at the bifurcation. Mr. Howard acknowledged the challenges of detecting CWs on duplex scans, explaining that they are often visible on the posterior wall in sagittal imaging. His talk generated significant audience interest, though time constraints left many questions unanswered. However, one key takeaway was that while CWs do not typically cause significant stenosis, they can disrupt blood flow through a mobile flap, even without major velocity changes—something I will now be more mindful of in daily practice. In the second half of his talk, he addressed variability in stenosis grading across UK labs, noting inconsistencies at higher levels (80%–90% stenosis), complicating near occlusion assessment. He proposed defining near occlusions as an ICA diameter of less than 3mm from the carotid bulb to the skull base and advocated for a standardised grading approach. Mr Howards talk was among my favourites.

The next anticipated segment of day two was about report writing. Dr Modaresi opened the session by sharing his insights into the art of report writing and reflected on his own 36-year journey. He discussed the evolution from lightboxes to digital imaging, highlighting the shift to modern equipment and scanning rooms and the transition from paper request forms to electronic systems like PACS. Despite his extensive experience, Dr Modaresi revealed that he never received formal training in report writing.

Although Professional Practice Guidelines (PPGs) are available for grading stenosis, outlining scan protocols and grading criteria's, Dr Modaresi posed an important question: "do we ever consider what surgeons truly need from our reports?".

To answer this, Mr. Tahir Hussain, Consultant Vascular Surgeon, London North West Healthcare Trust (LNWHT) opened the discussion. He emphasised the need for concise, focused duplex reports. When discussing lower limb venous reports, he noted that duplex diagrams typically reveal reflux location but stressed identifying whether veins are sub-fascial or extra-fascial for procedural planning, as preserving the sub-fascial component during ablation can reduce thermal damage risks. He highlighted the value of post-intervention surveillance scans in detecting subclinical disease, such as restenosis after SFA stent placement; indicating stent blockage or critical limb ischemia. On tibial disease, he advocated for duplex scanning alone in treatment planning, eliminating the need angiograms or CT scans. Mr. Hussain also discussed how duplex findings influence puncture approach selection (antegrade vs. retrograde), highlighting factors like groin calcification or profunda artery stenosis impacting treatment. He explained that an antegrade puncture near a proximal SFA lesion could obscure pathology, thus reiterating the importance of identifying and reporting such findings. Mr Hussain's

insights on report writing were particularly valuable, and I took away key lessons to apply in my own practice.

The next part on reporting writing featured 90-second overviews from various clinical vascular scientists, showcasing different styles. Jo Walker (Leicester Hospital) took the audience back to the 90s when diagrams were widely used in reporting. She explained that her lab still hand-draws diagrams, scan them into DICOM format, and upload them to PACS, emphasising that there's no single "right" way to report. Klaus Bond (Vice President Elect and Conference Secretary) echoed this, noting the evolution of reporting styles over time. Dr Nazia Saeed (LNWHT) highlighted the color-coded, diagrammatic reports, which help surgeons quickly identify disease areas. Rob James (Tomorrow Cardiovascular) compared their electronic reports, which feature diagrams, templates, comment sections, and a drop-down menu for additional details. Klaus concluded by polling the audience on digital vs. handwritten reports, revealing a mix of approaches across labs.

This year's ASM invited keynote speaker, Amir Bennett, Senior Lecturer in Ultrasound Education, Kings College Hospital, who spoke about medico-legal perspective; a somewhat underrepresented topic. Highlighting the alarming rise in medico-legal cases within the NHS, particularly negligence Amir identified key sources of litigation in vascular ultrasound. These included delayed treatment, incorrect interpretation of results, failure to diagnose, consent issues, communication failures, and failure to escalate care. Amir stressed the importance of minimising exposure, maintaining confidentiality, ensuring quality assurance, and upholding professional and legal accountability. He referenced BMUS and CSVS guidelines as useful but placed emphasis on when to recognise limitations in practice and when to seek appropriate training. Amir's lecture was truly insightful, and his discussion of legal challenges was particularly thought-provoking! I feel that future CSVS training sessions would greatly benefit from continued focus on such topics. It was a pleasure for Amir to refer to my talk during his address, which was based on training and quality standards, where he drew a direct link with medico-legal considerations.

In the Jackie Walton Lecture on Lymphoedema, Dr. Kristina Gordon, Consultant in Dermatology and Lymphovascular Medicine at St George's Hospital, explored various aspects of lymphoedema management. She distinguished between primary lymphoedema (genetic causes) and secondary lymphoedema (resulting from DVT or varicose veins) to aid accurate diagnosis and treatment. Discussing management, she emphasised bandaging and compression garments, describing Velcro compression wraps as a game changer. She presented a case study of a patient with severe lymphoedema that benefited from Velcro wraps, who had a diagnosis of "arm-chair leg"—referring to individuals who remain seated all day, a term I had not previously heard of! Dr. Gordon highlighted the importance of patient compliance with decongestion methods to promote lymphatic drainage. She concluded by underlining the necessity of taking a thorough patient history to ensure the most appropriate treatment plan.

Following Dr. Gordon's presentation, Ben Warner-Michel, Clinical Specialist Sonographer, Kingston Hospital, gave a valuable talk on imaging lymphatics during vascular scans. He demonstrated how to differentiate normal and abnormal lymph nodes on ultrasound, using the analogy of a "rugby ball" for healthy elongated nodes and a "football" for round, abnormal lymph nodes. Ben discussed the significance of identifying clustered nodes, which may indicate metastatic disease, and noted that enlarged, vascularised lymph nodes over 10mm warrant attention. This insightful session highlighted the need for further discussions on the topic. Ben was also awarded this year's Prize for his case study abstract on 'Identifying Vascular Mimics'.

The all-day practical ultrasound session in the Duke's Room was a brilliant addition, drawing a steady stream of attendees on both days. It provided an excellent opportunity for networking and idea-sharing while allowing participants to test the latest equipment with the guidance of attentive clinical application specialists. To conclude the ASM, there was an extravagant evening affair at Oxford Hall with fantastic entertainment, featuring lively Drag Queens and a live band playing throughout the night.

A special thanks to the conference secretary Klaus Bond, shadow conference secretary Dr Nazia Saeed and all members of the CSVS Education Committee, Research Committee, Executive Committee, and the dedicated volunteers for their hard work in delivering yet another successful ASM.

Husnayya Al-haddad
Clinical Vascular Scientist
London North West Healthcare NHS Trust

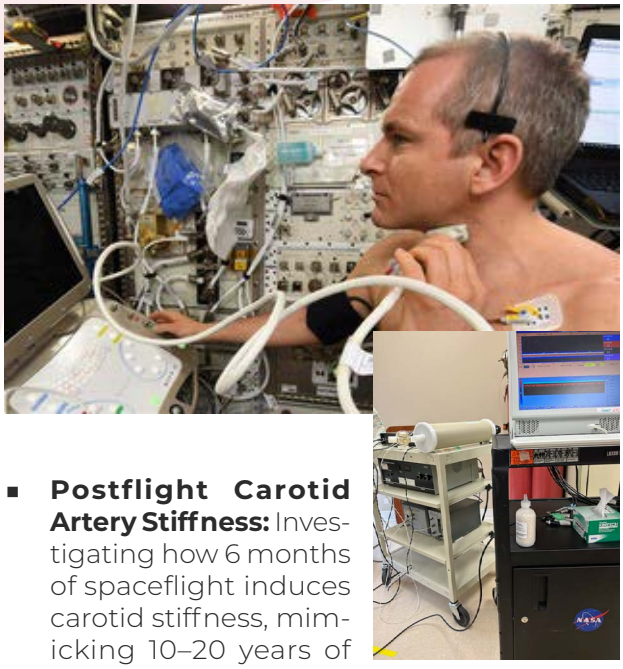
My STP elective: One Small Step into Rehabilitation, One Giant Leap into the World of Vascular Research and Spaceflight

For my STP elective, I chose to focus on two distinct facets of our role as Clinical Vascular Scientists. First, I explored the "scientist" aspect of our title by immersing myself in the world of vascular research. Second, I sought to understand what lies beyond amputation for our patients by engaging in rehabilitation efforts.

Exploring Vascular Research: The Scientist's Journey

As an avid runner and hiker, I've long been fascinated by the body's ability to adapt to extremes and the physiological effects of exposure to challenging conditions. A chance discussion between my training officer and astronaut Chris Hadfield introduced me to the vascular research being conducted by Prof. Richard Hughson in collaboration with the Canadian Space Agency and NASA. This serendipitous moment led me to the Schlegel-University of Waterloo Research Institute for Aging in Ontario, Canada, where I explored the vascular implications of spaceflight—a unique lens through which to study the aging process.

During my time there, I contributed to several research studies, including:



- **Postflight Carotid Artery Stiffness:** Investigating how 6 months of spaceflight induces carotid stiffness, mimicking 10–20 years of natural aging in both male and female astronauts.
- **Vascular Reactivity to CO_2 During Extreme Exercise:** Assessing how blood vessels supplying the brain respond under conditions of high exertion.
- **Continuous Glucose Monitoring (CGM) in Space:** Evaluating the correlation between oral glucose tolerance tests (OGTT) and CGM in healthy individuals to enable CGM use during space missions.
- **Optimising Spaceflight Exercise Regimens:** Refining protocols to mitigate bone density loss and muscle atrophy.

This experience deepened my appreciation for the exciting intersections of clinical practice and research. I am inspired to combine these two paths as I advance my career.

Understanding Life Beyond Amputation

Another pivotal moment in shaping my elective came when I attended a talk by vascular surgeon Neil Hopper, who returned to practice after undergoing bilateral amputation. His unique perspective—both as a surgeon and a patient—emphasised the importance of supporting patients beyond the operating room. Motivated by his story, I realised how little I knew about the rehabilitation journey, obtaining prosthetics, and adapting to life post-amputation. To bridge this gap, I arranged a placement at Barber Prosthetics in Vancouver, Canada.

This hands-on experience was invaluable. I engaged with every stage of the prosthetics process—from design, casting, and alignment to initial fittings and adjustments for existing prosthetics. At rehabilitation centres like Holy Family and G.F. Strong, I collaborated with multidisciplinary teams including prosthetists, rehabilitation nurses, physiotherapists, consultants, and podiatrists.

Perhaps the most transformative part of this experience was speaking with patients. Their candidness about the physical and emotional aspects of their journeys illuminated the importance of peer support. Witnessing patients motivate and guide one another—whether by sharing advice or simply demonstrating progress—highlighted the profound impact of community during recovery. Moving forward, I will actively encourage my patients to seek out and engage with support networks, having seen firsthand their immense value.

Funding opportunities

I am deeply grateful to The Harold Hyam Wingate Foundation for partially funding my elective through a medical travel grant. Their support made this transformative experience possible. I am passionate about equal opportunities and recognise that pursuing an elective abroad can be financially burdensome. To those considering an elective, I encourage reaching out to potential funding bodies—I am happy to share advice with anyone navigating this process, as I do not want financial situations to prevent anyone from pursuing such a valuable opportunity.

Adventures beyond the elective

Beyond the invaluable experiences of my elective, my time in Canada was enriched by unforgettable adventures exploring the country's natural and cultural wonders. I embarked on a road trip from Calgary to Vancouver, traversing the breathtaking landscapes of the Rocky Mountains, hiking through awe-inspiring trails, often coming face-to-face with wildlife, including black bears and grizzly bears. I also attended a traditional rodeo, immersing myself in a vibrant slice of Canadian culture, ventured to Vancouver Island for an incredible whale-watching experience, and helicoptered over Niagara Falls. These experiences added a sense of balance to my trip, making my time in Canada both professionally rewarding and personally unforgettable.

When choosing an elective, I believe it is crucial to look beyond the routine aspects of our roles. By stepping outside our usual day-to-day responsibilities and exploring areas that challenge or intrigue us, we open ourselves to transformative experiences and new perspectives. For me, venturing into vascular research and rehabilitation—a space unfamiliar to my clinical work—offered invaluable insights that I wouldn't have gained otherwise. It is often in these less familiar territories that the true value of an elective emerges, providing opportunities to grow both personally and professionally.

Holly Watson
Clinical Vascular Scientist
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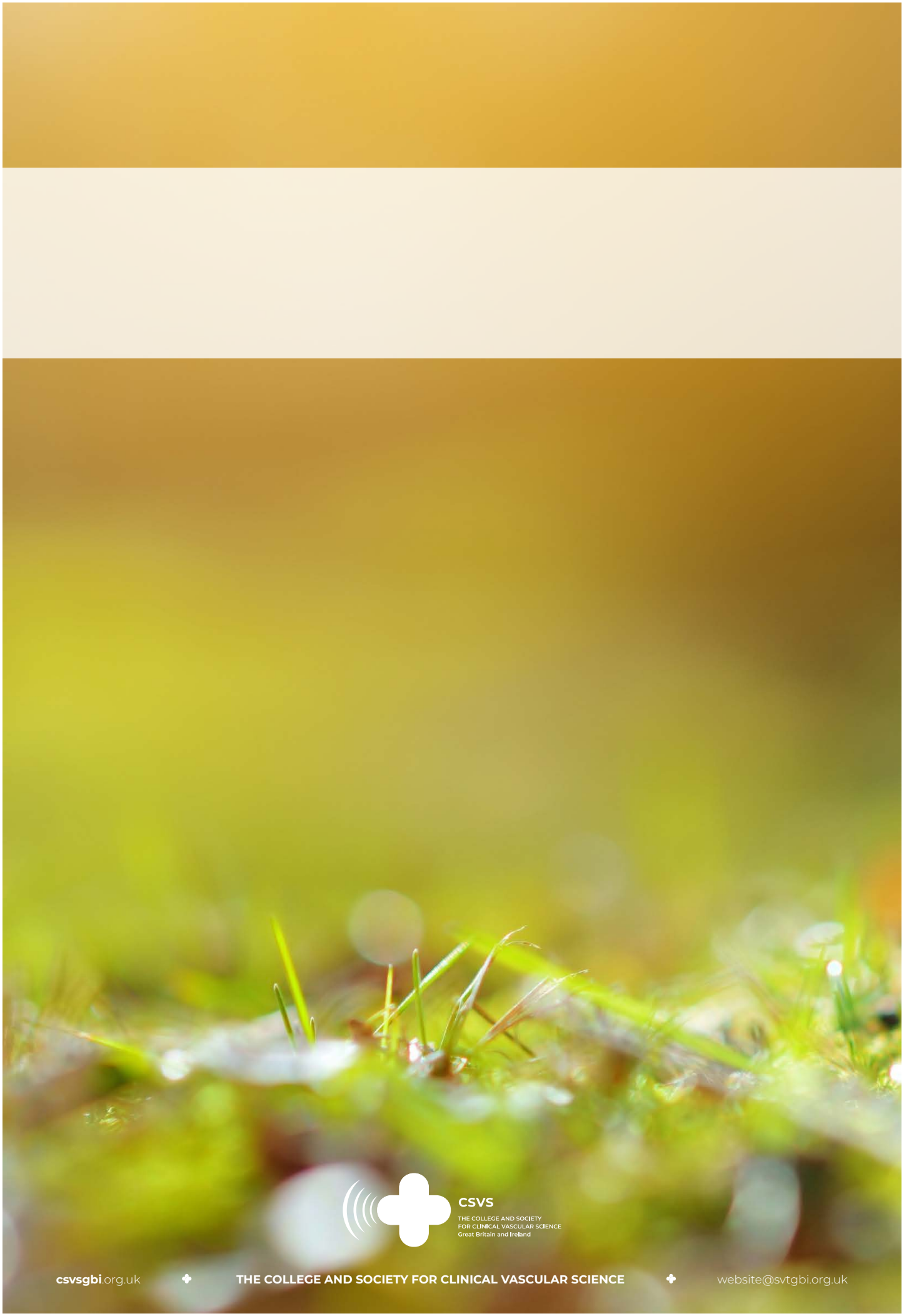
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