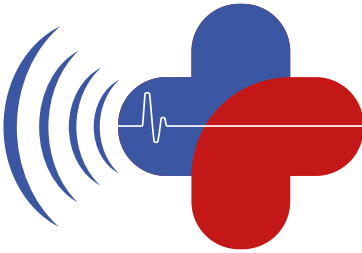


Advancing non-invasive vascular diagnostic services by promoting training and research in Vascular Science.



CSVS

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

WINTER
2024



IN THIS ISSUE

- President's Message
- How do we ensure Vascular Science services are fit for the future?
- CASE STUDY: Incidental Vascular Complications Discovered in a Six-Year-Old Patient with a History of Neonatal ECMO
- Bitesize Research: EVAR Surveillance
- A sabbatical in New Zealand
- The CSVS Vascular Access and Haemodialysis Study Day
- CSVS Research Series 8. Dissemination of Research
- AVS Accreditation



President's Message

I am honoured and pleased that I have managed to represent our society on various committees with the help and support of our energetic Executive Committee team. I can emphatically say that none of it would have been possible without the firm support of the board members.

Immense effort has gone into various projects in the background such as the new website, new online exam platform, updated PPGs, new financial payment platform, study days, research guidance, executive committee secretary, BMUS representative, membership secretary, newsletter and more. The full updates on all these projects are listed in the specific committee reports and recognition must be given to each committee chair and their respective teams for such an amazing amount of work, all completed in their own time. Please read the individual reports in this booklet so that you are aware of upcoming resources.

We have continued delivering face-to-face study days as it is in demand by our membership and mostly oversubscribed. I must say that I find these study days particularly useful to update and refresh my knowledge. We appreciate that it is difficult to get time off to attend these days and we have decided to continue with providing recordings of the talks for review as webinars through our website. A special thanks must go to Emma Robinson at BMUS for all her hard work and administrative support in the background.

Our Society has been involved in the updated Provision of Vascular Services 2024 document. The new document will be available for public access at the ASM and there will be stand on the main floor where you can have a look and possibly get a hard copy of this new document. I would like to thank all of the Executive Committee members for their input in the production of this document.

Our Society is once again represented at the BMUS ASM in Coventry this year on the Vascular Science stream with a series of topical lectures and invited speakers organised by our BMUS team lead (Tanyah Ewen). This is an excellent collaborative position that we intend to support in future years. We look forward to seeing you at this event.

We would also like to encourage everyone to submit information to the 2024 NHSE Stocktake. We appreciate the amount of work involved in the submission. This data is going to be used by the NHS to better understand the Physiological Sciences network that has long been overlooked. We shall keep you updated of the outcomes of this exercise.

We are also pleased to inform the membership that Klaus Bond has been voted in as the Vice President Elect. Klaus has been serving on the Executive Committee for some time and is well placed to take over the reins in due course. We wish him the best of luck. Our new Research Committee chair is Isaac Colliver, and we wish him well in his new role.

On a personal note, I would like to thank our Executive Committee for their unwavering support throughout my first year as the president of our new Society. All credit should go to the committee chairs and their teams. I am humbled by the sheer enthusiasm and knowledge within the combined team, and it is a blessing to be involved with this Society.

Yours sincerely,

Kamran Modaresi
CSVS President



How do we ensure Vascular Science services are fit for the future?

In the ever-evolving landscape of healthcare, the role of diagnostics is more critical than ever. Over the last few years NHS England has made significant investment and transformation in diagnostic services to enhance patient care and improve efficiency. There has been a particular focus on digital transformation, workforce development, increasing equipment, modernising estate and new community-based services.

Unfortunately for Vascular Science, most of this investment has been targeted at Imaging and Pathology services, with very little directed towards improving the Physiological Science services.

However, things are changing

NHS England's commitment to continue the improvement of diagnostic services now recognises the crucial role of Physiological Sciences across a wide range of elective and emergency patient pathways. This is reflected in the recent appointment of four National Speciality Advisors (NSAs) to the Diagnostic Transformation Programme specifically for Physiological Science, to provide clinical leadership and advice, to both NHS England policy makers and front-line clinical services.



A major aspect of these roles is to support the emerging Physiological Science network leadership teams with the formation of regional networks. The vascular regional networks will be the key enabler to support the growth and sustainability of vascular Science.

Why Networks are key

The existing Imaging and Pathology regional networks have significantly transformed local diagnostic services by, for example, investing in image sharing technology, modernising equipment, pooling resources and strategic workforce planning. The governance of the networks has been pivotal in ensuring their success, with collaborative leadership involving clinical and operational leaders from each Trust across the network. This collaborative approach has ensured that decisions are made with a broad range of stakeholders, fostering a sense of ownership and commitment across the network.

You have a voice

Your front-line clinical knowledge and experience are vital to ensure that we can drive and influence decisions that impact the future of Vascular Science and help shape the future model of clinical pathways that will make a real difference to patient care in your region.

To know more about what is happening with physiological science networks in your region, simply fill in this [contact information form](#).

Save your response to have the option to edit your details in the future. You can check which of NHS England's seven regions and Integrated Care System you're in here [NHS England » Regional teams](#).

Teresa Robinson

Consultant Clinical Scientist | AVS

National Speciality Advisor | Physiological Science – Vascular, GI, Urodynamics National Diagnostic Programme | NHS England



CASE STUDY:

Incidental Vascular Complications Discovered in a Six-Year-Old Patient with a History of Neonatal ECMO

Background

Extracorporeal Membrane Oxygenation (ECMO) is a form of artificial life support used to provide oxygenated blood to the tissues by bypassing either the pulmonary system or the entire cardiopulmonary system in cases of severe respiratory or cardiac failure, respectively.¹ There are several types of ECMO, with the two most common being veno-arterial (VA) and veno-venous (VV) ECMO.

In both VA and VV ECMO, blood is drawn from the venous system and oxygenated outside the body. In VA ECMO, the oxygenated blood is returned to the arterial system, whereas, in VV ECMO, it is returned to the venous system.

While ECMO has significantly improved survival rates for critically ill patients, it does come with risks. One major concern is the potential for long-term vascular complications resulting from the cannulation of major arteries and veins. This case study highlights the chronic vascular implications associated with neonatal VA ECMO and underscores the importance of obtaining a thorough medical history.

Case Presentation

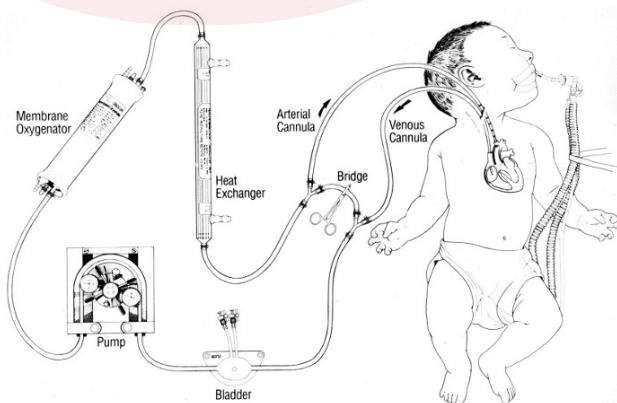


Fig 1. Schematic Diagram of Neonate on VA ECMO

The patient, a six-year-old child, had received recent MRI imaging revealing abnormal venous circulation in the abdomen, incidental to a suspected Spigelian hernia. During the multidisciplinary team (MDT) meeting, it was suggested that

vascular imaging of the neck be performed to rule out “further delineation of venous anatomy”. Consequently, the patient was booked into the vascular lab for a central venous ultrasound scan.

Ultrasound Findings:

Venous Presentation

A detailed central venous scan demonstrated no true right IJV to be present. Likely to have been chronically occluded and atrophied over time. Additionally, there were poor views of the brachiocephalic vein. Alternative findings including a complex network of collateral veins which drained flow to the contralateral side, right upper limb swelling and prominent superficial veins across the right chest/shoulder, was indicative of more central venous obstruction (e.g., an occluded right brachiocephalic vein).

Arterial Presentation

Incidentally, the right CCA was found to be chronically occluded and atrophied. The external carotid artery (ECA) remained widely patent with low-resistant retrograde flow diverting into the internal carotid artery (ICA). The right vertebral artery was patent and appeared atypically large in calibre with a high volume of flow. Normal arterial flow was sampled in the subclavian and axillary arteries on the ipsilateral side, implying the brachiocephalic artery was patent. Normal venous/arterial anatomy and haemodynamics identified on the contralateral side.

Patient History

Surprised by the unusual findings in an otherwise healthy six-year-old, we took a detailed medical history from the patient’s parents. They informed us that the patient was born with several congenital conditions, including severe respiratory distress and gastroschisis, a condition in which the abdominal wall is underdeveloped during pregnancy.³ The patient required extensive surgical intervention and ECMO support in the neonatal period. Much of the patient’s medical history was inaccessible prior to the time of scanning because the patient had been transferred from a different

Fig 2 and 3. Schematic diagram of Occluded CCA and retrograde filling via ECA. And sonographic image of occluded CCA.

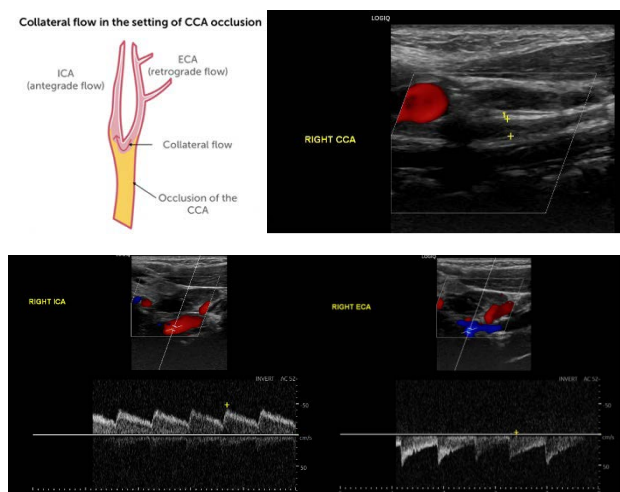


Fig 4 and 5. Sonographic images of retrograde flow in ECA and antegrade flow in ICA.

hospital and the electric patient records had not been passed over. Based on this information, we were able to conclude that the atypical findings were likely an iatrogenic consequence rather than a pathologic or anatomical variation.

Discussion

The body has a remarkable capacity to adapt and compensate for vascular injuries through various mechanisms, such as collateral circulation, angiogenesis, vessel enlargement, and the redirection of blood flow. In the context of neonatal VA ECMO, it is common practice to cannulate and ligate the right CCA to prevent cerebral embolization.² However, the decision to repair the CCA post-ECMO is a subject of debate.⁴ Repairing the CCA carries risks, including stroke, anastomotic blowout, and aneurysm. On the other hand, not repairing it can lead to permanent vessel occlusion and chronic changes to cerebral circulation, making the patient more vulnerable to cerebrovascular injuries later in life. In this case, the CCA remained ligated.

However, the ultrasound scan also demonstrated successful collateral adaptation, showing retrograde flow in the ECA supplying the ipsilateral ICA, along with enhanced compensatory flow from the right vertebral artery, which feeds the posterior cerebral circulation. These arterial changes likely compensated for the reduced cerebral

blood supply caused by the ligation of the CCA, which may explain the absence of overt neurological symptoms in the patient. Research indicates that many neonate ECMO survivors adapt well due to the brain's high plasticity, although some may experience vascular or neurological complications over time.⁵ It is worth noting that the patient experienced seizure activity during their time on ECMO, however, subsequent MRI imaging conducted in the years following has confirmed no obvious ischemic damage and normal intracranial appearances. Seizure activity in neonates during and after ECMO is a topic of intense discussion, as the true extent of cerebrovascular disruption caused by CCA ligation opposed to other mechanisms related to ECMO remain unclear.^{2,6}

Although this patient was asymptomatic of any arterial insufficiencies at the time of their scan, this case study highlights the need for better awareness for vascular scientists of what the long-term effects of medical interventions such as ECMO look like for patients. Finally, given the complex and delicate nature of vascular compensation, it is essential for patients, families, and clinicians to be aware of potential vascular symptoms. These can include headaches, visual disturbances, painful/swollen upper limbs, or cognitive changes, all of which could facilitate early intervention should any complications arise.⁷

Conclusion

This case illustrates the long-term vascular changes that can result from neonatal ECMO. The patient's incidental finding of IJV occlusion and CCA ligation underscores the body's ability to adapt to vascular injury, the importance to retrieve a detailed patient history and the potential need for long-term vascular surveillance.⁸ Although the body can adapt through collateral circulation, proactive monitoring and education are essential for identifying and managing any delayed complications.+

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

Ben Freedman
Clinical Vascular Scientist HCPC, AVS

References

- Kazmi, S.O. et al. (2018) 'Cerebral pathophysiology in Extracorporeal Membrane Oxygenation: Pitfalls in daily clinical management', *Critical Care Research and Practice*, 2018, pp. 1-11. doi:10.1155/2018/3237810.
- Campbell LR, Bunyapen C, Holmes GL, Howell CG Jr, Kanto WP Jr. Right common carotid artery ligation in extracorporeal membrane oxygenation. *J Pediatr*. 1988 Jul;113(1 Pt 1):110-3. doi: 10.1016/S0022-3476(88)80543-2. PMID: 3385518.
- Lalani, A. et al. (2016) 'Management of patients with gastroschisis requiring extracorporeal membrane oxygenation for concurrent respiratory failure', *The American Surgeon*, 82(9), pp. 768-772. doi:10.1177/000313481608200929.
- Adolph, V. et al. (1990) 'Carotid artery repair after pediatric extracorporeal membrane oxygenation', *Journal of Pediatric Surgery*, 25(8), pp. 867-870. doi:10.1016/0022-3468(90)90193-d.
- ECLS Registry Report 2023 - A comprehensive annual report detailing ECMO survival rates, complications, and outcomes. This report, maintained by the Extracorporeal Life Support Organization (ELSO), provides insight into the risks and benefits of ECMO, including long-term effects on pediatric patients. Available at ELSO.org.
- Liem, R.I., et al. (2020). "Long-term outcomes of ECMO in neonates and children." *Journal of Pediatrics*, 214, 9-15. This article discusses the incidence of vascular complications like jugular vein occlusion and carotid artery ligation in ECMO survivors and describes the brain's plasticity in compensating for these vascular changes.
- Moscatelli, A., et al. (2019). "Late vascular complications following ECMO in neonatal patients." *Seminars in Perinatology*, 43(8), 417-424. This study describes the risks associated with chronic vascular complications following neonatal ECMO, including how these may present during later developmental stages.
- Zamora, I.J., et al. (2019). "Surveillance of carotid artery occlusion in ECMO survivors." *Annals of Vascular Surgery*, 54, 97-103. This article provides insights into long-term outcomes for ECMO patients and advocates for routine vascular surveillance to catch asymptomatic findings, such as jugular vein occlusion and carotid artery ligation.



Bitesize Research:

EVAR Surveillance

AUTHORS NAME: Isaac Colliver, University Hospitals Coventry & Warwickshire NHS Trust

PAPER 1

Smith, L. et al (2021). A Comparison of Computed Tomography Angiography and Colour Duplex Ultrasound Surveillance Post Infra-renal Endovascular Aortic Aneurysm Repair: Financial Implications and Impact of Different International Surveillance Guidelines. Eur J Vasc Endovasc Surg 62(2):193-201.

Summary

A retrospective study comparing the detection rate of computed tomography angiography (CTA) and colour duplex ultrasound surveillance (CDUS), with further estimation of the financial costs of four different surveillance protocols across a 5 year period. 309 patients had a CTA and CDUS within a four-week window and were included for agreement analysis, yielding a coefficient of 0.68 for CDUS versus CTA in detecting aortic sac abnormalities. 5-year estimated surveillance cost per patient according to each protocol was £1270 for the Society for Vascular Surgery (SVS), £1076 for the European Society of Vascular Surgery (ESVS), £3003 for the National Institute for Health Care and Excellence (NICE), and £1244 for the local protocol.

Pros

Though 8 false negatives were recorded on CDUS for the detection of type 1 and 3 endoleaks, significant sac expansion was detected on 7 of them – with the remaining 1 being a small type 1a detected on CTA that was untreated and resolved without surgical intervention. Furthermore, of the 35 false positives detected on CDUS, 33 were benign type 2 endoleaks. This is one study amongst many that suggests acceptable agreement between CDUS and CTA for the purposes of surveillance.

Cons

Single centre, retrospective study within which the local protocol meant that CTA scans were predominantly performed as a result of CDUS detecting an abnormality – confounding the accurate estimation of CDUS sensitivity and specificity. Also only included infra-renal EVARs, thus results cannot be used for inference of surveillance of complex EVARs.

Only three patient risk categories used for the financial estimate and did not include estimates for renal replacement therapy for the treatment of acute kidney injury – potentially causing an under-estimation of costs of intense CTA surveillance. Costs associated with endoleak detection (33% of patients) and re-intervention (21% of patients) were also not included.

Impact on Practice

The proportion of routine CTA to CDUS scans carries a significant cost implication and thus is an additional metric to consider when designing an EVAR surveillance program.

PAPER 2

Antoniou, GA. et al (2023). Meta-Analysis of Compliance with Endovascular Aneurysm Repair Surveillance: The EVAR Surveillance Paradox. Eur J Vasc Endovasc Surg 65(2):244-254.

Summary

Systematic review of 13 cohort studies, including 22,762 patients, comparing EVAR patients who were compliant or non-compliant with surveillance. The meta-analysis found no difference in overall survival or aneurysm-related mortality, regardless of compliance.

Pros

Large meta-analysis which found 43% of patients were non-compliant with surveillance.

Cons

The meta-analysis defined non-compliance as failure to attend at least one post-EVAR follow up, however real-world attendance can be less binary. Most of the included studies accommodated for this to some degree – e.g. allowing

up to 15 or 18 months for a surveillance visit, or creating a category for patchy compliance separate from those completely lost to follow up. Though the meta-analysis found no statistically significant difference in sub-group analysis between those completely lost to follow up and routine follow up for all cause mortality, the authors note that the subgroup of studies were very small and thus patchy compliance may have been a confounding variable on the overall outcome of the meta-analysis.

Again, the included studies were for infra-renal EVAR only – so compliance may have differing implications for complex EVARs. Eight of the thirteen studies included were deemed high risk of bias and certainty of evidence was very low. Only three studies reported on aneurysm-related mortality, which yielded no significant difference between compliant and non-compliant patients. However, the confidence interval was quite wide indicating a low precision estimate of the hazard ratio – suggesting more data is required to confidently conclude the impact of surveillance on aneurysm-related mortality.

The authors acknowledge that differences in surveillance program between studies (i.e. following the Society for Vascular Surgery's recommended yearly imaging interval – or the European Society for Vascular Surgery's repeat imaging at five years if the initial post-operative scan is satisfactory) could have also confounded the meta-analysis, though studies did not explicitly state which guideline they had adhered to.

Impact on Practice

A large percentage of patients are non-compliant with EVAR surveillance, which carries a cost implication via missed appointments. Which patients may benefit from post-EVAR surveillance is unknown, so the authors advocate for a balanced approach at this stage and to watch out for the outcome of Delphi consensus research by the International Risk Stratification in EVAR (IRIS-EVAR) working group.

PAPER 3

Karaolanis, G. et al (2022). Colour Duplex and/or Contrast-Enhanced Ultrasound Compared with Computed Tomography Angiography for Endoleak Detection after Endovascular Abdominal Aortic Aneurysm Repair: A Systematic Review and Meta-Analysis. J Clin Med 11(13):36285.

Summary

Systematic review of 38 studies, including 5214 patients, comparing the sensitivity of colour duplex ultrasound (CDUS), contrast-enhanced ultrasound (CEUS), and computed tomography angiography (CTA) in detection of endoleaks. 27 studies – including 3583 patients – provided data comparing CDUS with CTA, whilst 15 studies – including 1631 patients – compared CEUS with CTA.

Pros

Large up-to-date meta-analysis of CDUS, CEUS, and CTA's ability to detect endoleak.

Cons

Though the authors report the pooled rate of endoleak detection for each modality, they did not include meta-anal-

ysis of the sensitivity, specificity, and negative or positive predictive values.

Impact on Practice

CEUS may be the most sensitive option for the detection of endoleak, however CTA may still be preferred for confirmatory imaging where endoleak is suspected as CTA then facilitates assessment for re-intervention.

CDUS may still have adequate specificity for use as routine surveillance to exclude endoleak.

PAPER 4

Ash, J. et al (2020). LUCY results show females have equivalent outcomes to males following endovascular abdominal aortic aneurysm repair despite more complex aortic morphology. Journal of Vascular Surgery 72(1):566-575.

Summary

Prospective non-randomised study of a low-profile stent graft (Ovation, made by Endologix Inc.), comparing outcomes between females and males – to help address the deficit of endovascular devices suitable for the treatment of females with AAA. The Ovation stent was designed to be deployable in small access vessel diameters and a broad range of aortoiliac anatomy.

Pros

Largest prospective EVAR study of females conducted to date. Demonstrated comparable procedural and perioperative outcomes between sexes for the Ovation stent graft, potentially providing an additional option clinicians to treat aneurysms in female patients.



Cons


Median maximal AAA diameters were 50 ± 6 mm in females and 53 ± 10 mm in males, meaning many patients were treated before the typical surgical threshold seen in the

UK and thus may reduce the applicability of the findings in the UK.

Only followed up to 1 year at this point, with low sample size, therefore minimal inference can or will be made for

long-term durability of the Ovation stent graft in females versus males.

Impact on Practice

Highlights the deficit in options for EVAR in female patients. 



Amazing opportunity: A sabbatical in New Zealand

The Specialist Vein Care clinic in Dunedin, New Zealand is looking for a part time / full time vascular sonographer.

This is a one-year sabbatical and an exciting opportunity for one fortunate individual (pioneer) wishing to experience the incredible outdoor opportunities of Southern Otago and the wider South Island. This includes but is not limited to the amazing Cycle trails of Central Otago, the excitement of Queenstown, the beauty of the Abel Tasman and the serenity and fortitude of Fiordland.

The Specialist Vein Clinic is teaming up with Dunedin Hospital and the University of Central Otago to create a one-year Sabbatical position. We foresee a long lasting and synergistic collaboration which will benefit both employees and employers alike.

To discuss this amazing opportunity, please contact myself at the email address below for further information.

Pete Laws @ Petelaws88@gmail.com

The CSVS Vascular Access and Haemodialysis Study Day at King's College Hospital in September 2024



The study day began with a warm welcome from Louis Alexander, Clinical Vascular Scientist, marking his first event as a CSVS Study Day Officer. In his introduction he spoke about the important role of vascular ultrasound and haemodialysis access in enhancing the quality of life for individuals with renal conditions.

Louis introduced the morning's first speaker, Mr. Ranjeet Brar, a Consultant Vascular and Endovascular Surgeon at King's College Hospital (KCH). Sharing experiences of rushing patients to surgery that required new access sites due to blow-outs, Mr. Brar emphasised the importance of strategic planning in dialysis access and to always keep preservation of future sites on your mind. He mentioned that although arteriovenous grafts (AVGs) can be accessed more quickly in critical patients, they have higher infection rates than arteriovenous fistulas (AVFs) and despite using subcutaneous materials, AVGs are susceptible to stenosis and failure due to endothelialisation and intimal hyperplasia. It was interesting to understand that non-dialysing fistulas and kidney transplant patients faced a greater risk of aneurysm formation due to immunosuppression weakening the vessel wall's collagen matrix. During his talk Mr Brar delivered an impressive live imitation of the

constant flow pattern heard during a Doppler assessment, to give emphasis to the critical role of duplex US in fistula maturation—underlining absent flow requiring immediate surgical revision.

Dr. Jason Wilkins, Consultant Radiologist, KCH, gave a light-hearted presentation on interventional radiology (IR) and vascular access, focusing on fistuloplasty interventions. His talk kept the theme of emergencies that can arise on a 'typical Friday afternoon'. He discussed various techniques, from traditional balloons to minimally invasive options, using case studies to highlight stenosis and other complications. He explained that for intimal hyperplasia and thickened walls, high-pressure balloons were preferred, though they carried a higher risk of rupture. Dr. Wilkins stressed the importance of detailed diagrammatic duplex reports, including blockage locations and lesion counts, to guide decisions on single or multiple punc-



tures. He also explored the potential of drug-eluting balloons (DEBs) AKA 'the new kid on the block' but found no significant advantage over standard balloons. He introduced Endo-AVF, a relatively new technique of access formation without surgery speaking of its requirements and creation process. Dr Wilkins concluded by advising vascular scientists to familiarise themselves with their IR suite to understand procedures, and to know which information is essential in reports.



After a delightful networking lunch, the afternoon session began with Dr. Alexandra Rankin, Consultant Nephrologist, KCH. She introduced the concept of GIRFT (Get it Right the First Time) and addressed the challenges of customising treatment for patients, including those ineligible for kidney transplantation or who choose to opt out of dialysis, where supportive care becomes crucial. She discussed the struggles faced by "crash-landers," who require immediate dialysis and find it difficult to adjust to life-altering changes compared to those referred for planned treatments. Acknowledging the busy vascular lab, she highlighted the role of acute access clinics that prioritise urgent cases and refer for DUS, such as clotted fistulas, those that cannot be cannulated and those which have failed to mature. She explained that maintaining central venous patency is vital for determining whether interim interventions, like a temporary haemodialysis line, are necessary while efforts are made to restore fistula function. Dr. Jenkins therefore stressed the critical role of vascular access clinics and the need for regular monitoring to prevent complications.

Fatima De Figueiredo, Senior Vascular Access Nurse, KCH, shared heartening insights about the emotional challenges nurses face of patients with renal failure undergoing frequent dialysis. She emphasised the importance of effective communication, patient education, and staff

training in needling techniques, particularly the rope ladder technique to minimise aneurysm formation due to repeated needling. Since vascular access is a lifeline for patients, Fatima expressed that careful monitoring before and after dialysis is crucial, and every effort should be made to avoid the "dreaded line." Fatima stressed the need for compassionate and respectful cannulation, advocating for strong links between patients and the multidisciplinary team to ensure effective management of care pathways.

Jonathan Bartley, Patient Support and Advocacy Manager at Kidney Care UK Charity, spoke about patient advocacy services, sharing also his own experiences as a dialysis patient. Explaining that chronic kidney disease impacts individuals not just physically, but financially, spiritually, emotionally, and sexually, he described the range of services the charity provides to support such patients including counselling. A key point was the link between body image issues and body dysmorphia, which can deter patients from choosing dialysis. Concerns about not being able to engage in activities like gym workouts also influenced treatment decisions. For many, the fear of losing the ability to work while on dialysis outweighs the potential benefits, leading them to opt out of treatment. He explained he often helps bridge communication gaps between patients and consultants. Jonathan highlighted the importance of addressing the social factors and the need for active listening and timely intervention.



Ben Freedman, Chief Clinical Vascular Scientist and Lab Manager at KCH took the stage next and began his segment by thanking Louis and the dedicated volunteers. He discussed the intricacies of haemodynamics related to AVFs using ultrasound and used the analogy of a dam restricting a river to illustrate how obstructions can lead to pressure build-up in fis-



tula flow volume (FV). He underlined that flow velocity is a sensitive indicator of circuit health, noting that high readings might signal stenosis but do not always necessitate intervention, as many functioning fistulas with stenosis remain clinically effective. Regarding steal syndrome, Ben shared his method of manually compressing the fistula and observing the effects on distal arteries using DUS. If flow toward the hand improved while fistula flow decreased by half that it may suggest some degree of steal, though this approach does not definitively confirm the syndrome. Building on Dr. Wilkin's talk on endo-AVF, Ben stressed the importance of assessing outflows collectively to ensure adequate dialysis flow, measuring both deep and superficial vein flows and comparing them to arterial flow. In his experience of endo-AVF so far, he noted that stenosis is often found in the perforators and radial vein above the anastomosis. Ben reiterated the importance of diagrams in reports to improve communication, especially in complex cases involving collaterals during occlusions, providing vital information for nurses during needling. I found Ben's insights particularly valuable—a segment I wish had lasted longer.

Tamara Walcott- Dhainy, Clinical Vascular Scientist, KCH delivered the final presentation focusing on vein mapping assessment. She highlighted key factors for surgical planning including understanding surgeons' preferences for fistula creation to enhance mapping efficiency. Developing on Ben's presentation, Tamara outlined additional requirements for endo-AVF vein mapping and creation site requirements, emphasising the WavelinQ form's role in capturing patient history, including current dialysis access method. The key considerations that Tamara mentioned for endo-AVF included assessing the venous side for patency, ensuring perforators are non-tortuous and over 2 mm in diameter, identifying their connections

to medial or lateral veins, measuring deep veins, and confirming the gap between the radial artery and vein is less than 2 mm.

The final segment of the hands-on workshop organised by the KCH team was especially valuable with a lot of careful planning. Thanks to the dedicated patient volunteers, attendees had the opportunity to practice scanning fistula patients at various stations set up by Siemens, GE Logiq, and Philips. The session featured many in-depth demonstrations by KCH vascular scientists, adding traction to the session with the practical element and the perfect way to put knowledge into practise.

Overall, the fistula study day brought together a well-rounded picture of treating patients with chronic kidney disease from many perspectives from the speakers, highlighting that the pathway to achieving optimal vascular access is complex, requiring collaboration and continuous improvement to meet patient needs.

Louis's study day was excellent from start to finish with careful planning evident throughout the session. The event would not have been possible without the speakers, dedicated volunteers, Clinical Application Specialists, media specialist Neil Bauckham (Creative Director, Show Motion Media) and of course the entire KCH team. A special thanks goes to Ben Freedman and Emma Robinson (Chief Operating Officer, BMUS) for their support.+

Husnayya Al-haddad
Clinical Vascular Scientist
Lewisham and Greenwich NHS Trust



CSVS Research Series

8. Dissemination of Research

In this latest Newsletter Series on Research, we are looking at research dissemination and how best to get your key findings across. In the words of Professor Chris Whitty (Chief Medical Officer for England):

“Research is of no use unless it gets to the people who need to use it”

It is probably never too early in a projects’ life-time to identify who is your audience. Maximum benefit of your research requires engaging with your primary audience and the stakeholders who have an interest or will benefit from your research from the very beginning.

Your type of research output should be geared for optimum delivery to create maximum impact. Whether your interested parties be direct colleagues, clinicians, patients, public, charities managers, decision makers, commissioners or any combinations of these. Understanding where different audiences may look for information and using those channels accordingly will help maximise your output.

If you have been awarded a grant for your research, a pre-requisite maybe clearly mapping how your research will be disseminated. For example, our own CSVS Research Grant requires completion of a Newsletter article and AGM presentation. Similarly, regional ethics committees often stipulate dissemination plans are embedded into the original research proposal, typically this will also include provision of lay summaries to participants.

Traditional research dissemination approaches revolve around the 3 ‘Ps’:

- Posters
- Presentations
- Publications

Many meetings and conferences (eg. VS / CSVS AGM, BMUS, Charing Cross, UK Stroke Forum) offer poster exhibitions running alongside the main programme. This is a great way to display your whole project in a succinct, portable and very accessible way, while also offering you

the opportunity to informally speak with your audience directly and network with interested parties. It also makes for a useful informative display for your hospital corridors, waiting rooms or scanning rooms etc. Instruction for creating posters is included in relevant websites, but generally should be eye-catching with a mixture of graphics and text that can be read in two minutes and is not too ‘busy.’

Although researchers may lean towards written communications to get their research across, more effective communication to patients or decision makers for example, will be through talks in Public Involvement Programme (PIP). Practising presentations in monthly lab meetings, as well as delivering your research to people who may not otherwise hear it, bring questions and perspectives you may not have thought of. It’s also a good way of getting feedback prior to publication and signposting your audience to future publications.

Given the broad spectrum of subject areas vascular ultrasound encompasses, there are many different options for submitting papers for publication – most typically, peer-reviewed journals. Many journals are listed on the CSVS website, along with their impact factor (calculated from the number times their articles are cited within the last few years and is an useful way of comparing the impact of journals).

Journal List (not exhaustive!)	
Journal of Endovascular Therapy	European Journal of Ultrasound
Journal of Vascular Access	European Journal of Vascular and Endovascular Surgery
Journal of Vascular Surgery of GB and Ireland (JVSGBI)	Stroke
Journal of Vascular Surgery	European Journal of Ultrasound
Ultrasound in Medicine and Biology	British Journal of Surgery
Radiology	British Medical Journal
The Lancet	New England Journal of Medicine

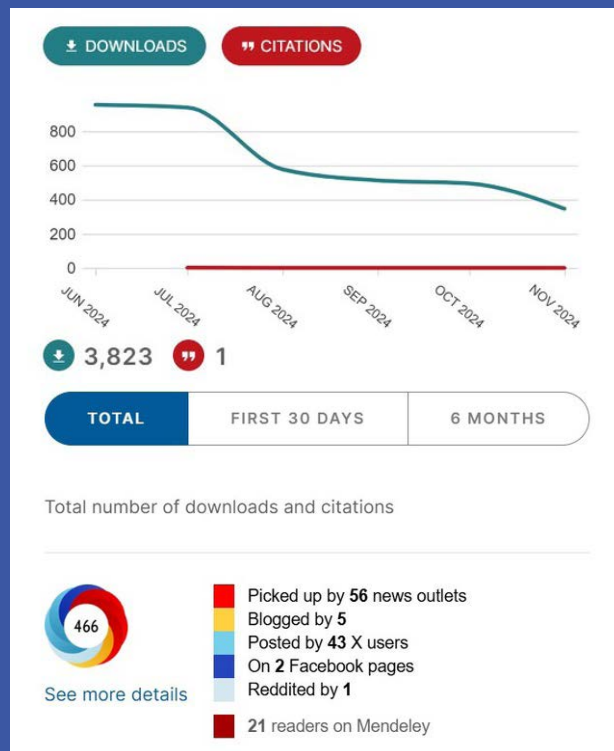
CSVS membership will provide accessibility to many of these journals via the ScienceDirect Access link provided under the [My Locker webpage](#), on the My SVTGBI navigation pane on the left hand side. Before writing your paper, have a look at the type of articles journals produce, they may accept Case Studies as well as Original Research articles and each have their own instructions to authors. Choosing titles and keywords carefully, along with a well written abstract will ultimately help determine how effective a literature search will be in picking up your research.

There is a lot of resources online from your NHS Trust if you have a Research Department. Here's a link to the research web pages associated with [University Hospitals of Leicester](#) and [Oxford University Hospitals](#) to give you an example.

Increasingly, innovative dissemination methods that go beyond traditional academic publishing and meetings, where relevant, may achieve more widespread research uptake and understanding. There are many other possible lines of communication. Write less, talk more was one piece of advice from the NIHR for greater impact; tap into networks, attend meetings, give workshops, meet for coffee! Healthcare STP networks maybe a great place to start, MDTs, local or regional meetings, social media, a summary for a departmental website, which ever opportunities are pertinent. Use your Trust's communication teams or Research Departments to help you. Letters to the editor published in journals could be a good way to respond to a publication, help to keep the conversation going. Engaging with the public is widespread practice, you could produce a lay abstract for display on a noticeboard, attend patient forums or community groups. For example, if you'd looked at fistula assessment intervals, you'd benefit from talking to the renal patients and getting their view.

To match non-traditional outputs, Altmetric is just one system intended to complement traditional measures of output impact. Tracking attention that research outputs such as scholarly articles and data sets receive online. It pulls data from: social media, traditional media (mainstream and field specific), blogs and online reference managers. Altmetric now typically display next to each research article. Below is an example of recent research paper that was published in [Circulation Research](#). The research methodology was mentioned in the [4th article of the Research Series](#). As you can see, when the article was published in early June there

was a lot of attention in the news (mainly for two weeks) due to the Sildenafil compound that was used and the favourable results. Although the number of downloads has since reduced, it is in the top 5% of all research outputs scored by Altmetric.



<https://ahajournals.altmetric.com/details/164266268/news>

As you can see, there is much to consider when disseminating your work, and as a starting point, we would recommend the following useful NIHR link:

National Institute for Health Research (NIHR) – Centre for Engagement and Dissemination

<https://www.nihr.ac.uk/documents/how-to-disseminate-your-research/19951>

<https://evidence.nihr.ac.uk/collection/how-commissioners-use-research-evidence/>

Good luck!✚

Written by Yvonne Sensier
University Hospitals of Leicester

Edited by Osian Llwyd
Oxford University Hospitals/University of Oxford



| AVS Accreditation

Huge congratulations to these members for successfully passing their AVS Exams

- Emily Davies
- Charlotte Roberts
- Ranit Shail
- Ryan Lawford
- Narmatha Krishnaganth
- Shannon Halliwell

