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Endovascular Therapy

2024 ANNUAL MEETING



27th – 28th June 2024 • Tortworth Court Hotel, South Gloucestershire

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Endovascular Therapy

Annual Meeting 2024

Thursday 27th June - Friday 28th June
Tortworth Court Hotel, South Gloucestershire

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1. Das T, et al. *Catheter Cardiovasc Interv*. 2014;83(1):115-122. 2. Finn M, et al. *Vascular Disease Management*. 2023;20(10):E179-E182. 3. Shammas NW, et al. *J Endovasc Ther*. 2012;19(4):480-8. 4. Dattilo R, et al. *J Invasive Cardiol*. 2014;26(8):355-60. 5. Adams GL, et al. *J Cardiovasc Transl Res*. 2014;2(2):220-9. 6. Mustapha J, et al. *J Cereb Limb Ischem*. 2021;1(3):E108-E125. 7. Giannopoulos S, et al. *J Endovasc Ther*. 2020;27(5):714-725.

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Thursday 27th June

09.00 – 09.05	WELCOME
	<i>Bijan Modarai, BSET President</i>
09.05 – 09.35	ROULEAUX CLUB SYMPOSIUM & BSIRT
	<i>Chairs: Bijan Modarai, BSET President, Andrew Nickinson, Rouleaux Club President, and Alex Hardman</i>
09.05 – 09.15	UK endovascular training survey results
	<i>Alex Hardman, BSIR Trainee</i>
09.15 – 09.25	Developing a subspecialty practice post CCT
	<i>Sandip Nandhra, Consultant Vascular Surgeon, Newcastle Hospitals NHS Foundation Trust</i>
09.25- 09.35	How to be a generalist in the world of super specialisation
	<i>Hannah Travers, Consultant Vascular Surgeon, South Devon and Exeter Vascular Network</i>
09.35 – 09.50	BSET FELLOWSHIP REPORT
	<i>Chairs: Emma Wilton & Paul Moxey</i>
	2023 Training Fellowship
	<i>Anisha Perera</i>
	2023 Travel Fellowship
	<i>Ummul Contractor</i>
	2022 Travel Fellowship
	<i>Jun Cho</i>
09.50 – 10.30	ABSTRACT SESSION 1 – (4 + 2 minutes)
	<i>Chairs: Barend Mees, Colin Bicknell & Kaji Sritharan</i>
09.50 - 09.56	Long-term survival and reintervention following thoracic endovascular aortic repair in blunt traumatic thoracic aortic injury: A systematic review and meta-analysis
	Aya Hammad¹ , Matti Jubouri ¹ , Abdelaziz O. Surkhi ² , Mohamad Bashir ³ ¹ University Of York, York ² Faculty of Medicine, Al-Quds University, Jerusalem, Palestine ³ Velindre University NHS Trust, Cardiff

Thursday 27th June

09.56 – 10.02	<p>The association between social deprivation and survival after ruptured aortic aneurysms in a UK population</p> <p><i>James Budge¹, Keith Farrell-Dillon², Oliver Rees², Bilal Azhar¹, Iain Roy², William Selway², Barnaby Farquharson², Aurelien Gueroult², Ian Loftus², Peter Holt¹</i></p> <p>¹St George's University of London, London ²St George's University Hospitals NHS Foundation Trust, London</p>
10.02 – 10.08	<p>Multimodality approach to the repair of chronic post-dissection thoracic and thoracoabdominal aortic aneurysms</p> <p><i>Katarzyna Powezka, Maciej Juszcak, Massimo Vezzosi, Martin Claridge, Paul Clift, Eshan Senanayake, Jorge Mascaro, Donald J. Adam</i></p> <p>University Hospitals of Birmingham NHS Foundation Trust, Birmingham</p>
10.08 – 10.14	<p>Long-term outcomes of Fenestrated Endovascular Repair (FEVAR): A GLOBALSTAR registry study - preliminary results</p> <p><i>Aurélien Guérault¹, BSET Committee², GLOBALSTAR Collaborators³</i></p> <p>¹St George's Vascular Institute, London ²BSET, London ³Globalstar, London</p>
10.14 – 10.20	<p>Stent migration following EVAR: Predicting migration in contemporary practice</p> <p><i>Ammar Adel Abdullah¹, Lydia Hanna¹, Ahmed Bakr², Asif Mahmood², Celia Riga¹, Colin Bicknell¹</i></p> <p>¹Imperial College London, London ²University Coventry Hospital, Coventry</p>
10.20 – 10.26	<p>Unstented coeliac axis in custom-made 4-vessel FEVAR is safe and durable</p> <p><i>Anisha Perera¹, James Budge², Aurelien Gueroult¹, Iain Roy¹, Bilal Azhar², Ian Loftus¹, Peter Holt²</i></p> <p>¹St George's Vascular Institute, London ²St George's, University of London, London</p>
10.30 – 10.50	<p>GUEST LECTURE</p> <p><i>Chairs: Barend Mees and Colin Bicknell</i></p> <p>Collaborative data collection in complex aortic repair: what does this tell us and what questions are still left unanswered?</p> <p><i>Gustavo Oderich, John P. and Kathrine G. McGovern Professor of Surgery and Distinguished Chair of Vascular and Endovascular Surgery at the University of Texas Health Science Centre at Houston (UTHealth), USA</i></p>
10.50 – 11.20	COFFEE

Thursday 27th June

11.20 – 11.35	SOCIETY SPONSOR: ABBOTT	
	Chairs: Becky Sandford & Martin Claridge	
	Subintimal Supera stenting in complex CTO in patients with CLTI - The SuperSub 2	
	Mariano Palena, Interventional Radiologist, Policlinico Abano Terme (PD), Italy	
11.35 – 11.55	DEBATE (7 + 7 + 6)	
	Chairs: Becky Sandford & Martin Claridge	<div><div>FOR:</div><div>Caitlin Hicks, Associate Professor of Surgery in the Division of Vascular Surgery at Johns Hopkins University School of Medicine</div></div> <div><div>AGAINST:</div><div>Keith Jones, Consultant Vascular Surgeon, Frimley Health NHS Foundation Trust</div></div>
	Luminal gain equates to patient gain in peripheral arterial disease	
11.55 – 12.10	SOCIETY SPONSOR: GORE	
	Chairs: Katharine Lewis and Paul Bevis	
	GORE® VIABAHN® VBX Balloon Expandable Endoprosthesis (VBX Stent Graft) Clinical Program Updates	
	Arjan Hoksbergen, Consultant Vascular Surgeon, Amsterdam University Medical Centre	
12.10 – 12.30	GUEST LECTURE	
	Chairs: Katharine Lewis and Paul Bevis	
	IR and vascular surgery collaboration is not just a dream but the only acceptable future	
	Rob Morgan, Consultant Interventional Radiologist, St George's Hospital and BSIR President	
12.30 – 13.40	LUNCH	
13.40 – 14.00	DEBATE (7 + 7 + 6)	
	Chairs: Andy Wigham & Emma Wilton	<div><div>FOR:</div><div>Alun Davies, Professor of Vascular Surgery, Imperial College London</div></div> <div><div>Against:</div><div>Stephen Black, Professor of Venous Surgery, King's College London</div></div>
	Deep venous stents: we know where to put them, but we don't know who to put them into	

14.00 – 14.15	SOCIETY SPONSOR: MEDTRONIC	
	Chairs: Andy Wigham & Emma Wilton	 Engineering the extraordinary
	SmartPlan Pro: shaping the future of cardiovascular care with predictive simulations	
	Jean-Noël Albertini, Vascular Surgeon and CEO, Predisurge	
14.15 – 14.45	ABSTRACT SESSION 2 - (4 + 2 minutes)	
	Chairs: Nadeem Shaida, Nikesh Dattani & Rob Morgan	
14.15 – 14.21	Which stents perform best in the common femoral artery? An analysis of a consecutive series of 55 cases	
	Marta Madurska, Emma Scott, Klaus Overbeck South Tyneside and Sunderland NHS Foundation Trust, Sunderland	
14.21 – 14.27	Toward a core outcome set for intermittent claudication: A systematic review of reported outcomes	
	Akam Shwan ^{1,2,3} , Segun Lamidi ¹ , Calvin Chan ⁴ , Elizabeth Daniels ⁴ , Charlie Song-Smith ⁵ , Lydia Hanna ^{4,6} , Viknesh Sounderajah ⁴ , John Houghton ^{1,2,3} , Rob Sayers ^{1,2,3} ¹ Department of Cardiovascular Sciences, University of Leicester, Leicester ² Leicester Vascular Institute, University Hospitals of Leicester NHS Trust, Leicester ³ National Institute for Health Research Leicester Biomedical Research Centre – The Glenfield Hospital, Leicester ⁴ Department of Surgery and Cancer, Imperial College London, London ⁵ University College London Medical School, London ⁶ Department of Vascular Surgery, Imperial College Healthcare NHS Trust, London	
14.27 – 14.33	The natural history of splenic artery aneurysms: A decade's experience at a large tertiary vascular centre	
	Robert Leatherby ^{1,2} , David Li ^{1,2} , James Budge ^{1,2} , Adelola Oseni ³ , Rose Howroyd ³ , Peter Holt ^{1,2} , Iain Roy ^{1,2} ¹ St George's Vascular Institute, St George's University Hospital NHS Foundation Trust, London ² Cardiovascular & Genetics Institute, St George's University of London, London ³ Interventional Radiology Department, St George's University Hospital NHS Foundation Trust, London	
14.33 – 14.39	Rate and predictors of disease progression to chronic limb-threatening ischaemia in patients with non-surgically managed intermittent claudication: A systematic review	
	Joseph Froud ¹ , Madeleine Landin ¹ , Arsalan Wafi ² , Sarah White ³ , Lindsay Bearne ^{3,4} , Ashish Patel ² , Bijan Modarai ² ¹ Guy's and St Thomas' NHS Foundation Trust, London ² Academic Department of Vascular Surgery, St Thomas' Hospital, London ³ Population Health Research Institute, St George's University of London, London ⁴ Department of Population Health Sciences, King's College London, London	

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14.39 – 14.45	A retrospective study of the rate of complications in infra-inguinal angioplasties: SFA vs CFA percutaneous approach	
	Muhammad Asghar Butt, Muhammad Usman Cheema	
	Pilgrim Hospital, Boston	
14.45 – 15.05	GUEST LECTURE	
	Chairs: Nadeem Shaida, Nikesh Dattani & Rob Morgan	
	Endovascular advances in renal access	
	Kate Steiner, Consultant Interventional Radiologist, East and North Hertfordshire NHS Trust	
15.05 – 15.35	TEA	
15.35 – 15.50	SOCIETY SPONSOR: COOK MEDICAL	
	Chairs: Dave Bosanquet & Katharine Lewis	
	Predictable. Proven. Precise. Zilver PTX. Transparent data, long term clinical outcomes for your femoropopliteal patients	
	Paul Moxey, Consultant Vascular Surgeon, St George's NHS Trust	
15.50 – 16.20	CASE DISCUSSIONS	
	Chairs: Mike Jenkins and Martin Claridge	
	Aorto-iliac	
	Barend Mees, Vascular and Endovascular Surgeon, Maastricht, Netherlands	
	Aortic	
	Gustavo Oderich, John P. and Kathrine G. McGovern Professor of Surgery and Distinguished Chair of Vascular and Endovascular Surgery at the University of Texas Health Science Centre at Houston (UTHealth), USA	
	Below the knee	
	Ashish Patel, Clinical Senior Lecturer in Vascular Surgery and Consultant Vascular Surgeon, St Thomas' Hospital, London	
16.20 – 16.40	THE ROLE OF THE EXTENDED TEAM IN MANAGING SURVEILLANCE PROGRAMMES	
	Chairs: Martin Claridge & Shiva Dindyal	
16.20 – 16.27	EVAR surveillance in the 2020s: a pragmatic multimodal approach	
	Katy Bloom, Clinical Vascular Scientist, University of Birmingham	

16.27 – 16.34	<p>The role of the vascular scientist in the postoperative management of patients with lower limb revascularisation</p> <p><i>Soundrie Padayachee, Consultant, Ultrasonic Angiology, Guy's and St Thomas' Hospital</i></p>
16.34 – 16.40	DISCUSSION
16.40 – 17.40	<p>AORTIC PRIZE ABSTRACT SESSION - (7 + 3 minutes)</p> <p><i>Chairs: Gustavo Oderich, Rachel Bell & Simon Neequaye</i></p>
16.40 – 16.50	<p>Long term aortic remodelling outcomes for acute Type B aortic dissection</p> <p>Barnaby Farquharson, James Budge, Bilal Azhar, Iain Roy, Mital Desai, Ian Loftus, Peter Holt St George's Vascular Institute, London</p>
16.50 – 17.00	<p>Biological effects of radiation exposure in patients treated with X-ray guided endovascular aortic repair</p> <p>Tian T Yeong¹, Mohamed A Abdelhalim¹, Jayne Moquet², Stephen Barnard², Grainne OBrien³, Alberto Smith¹, Christophe Badie³, Ashish Patel¹, Elizabeth Ainsbury², Samantha YA Terry⁴, Bijan Modarai¹ ¹King's College London, Academic Department of Vascular Surgery, School of Cardiovascular Medicine and Metabolic Medicine & Sciences, BHF Centre of Research Excellence, Guys and St Thomas' NHS Trust, London ²Cytogenetics Group, UK Health Security Agency, Chilton, Oxfordshire ³Cancer Mechanisms and Biomarkers Group, UK Health Security Agency, Chilton, Oxfordshire ⁴King's College London, School of Biomedical Engineering & Imaging Sciences, London</p>
17.00 – 17.10	<p>Interim MRI results of patients in INTERCEPTar trial: Multicentre pilot randomised controlled trial of carbon dioxide flushing versus saline flushing of thoracic aortic stents</p> <p>Stephen Crockett¹, Lydia Hanna¹, Abhinav Singh¹, Stephen Gunning¹, Richard Nicholas¹, Colin Bicknell¹, Mohamad Hamady², Dennis Gable², Morad Sallam³, Bijan Modarai³, Said Abisi³, Oliver Lyons⁴, Richard Gibbs¹ ¹Imperial College London, London ²Baylor Scott White Institute, Plano, Texas, USA ³Guy's and St Thomas' NHS Foundation Trust, London ⁴Canterbury District Health Board, Canterbury, New Zealand</p>
17.10 – 17.20	<p>Machine learning algorithm development for longitudinal sarcopenia assessment of perioperative complex endovascular aortic aneurysm repair</p> <p>Tamer El-Sayed¹, Manish Bhardwaj², Ashwin Sivaharan¹, Varun Ojha², Huizhi Liang², Sandip Nandhra¹ ¹The Northern Vascular Centre, Freeman Hospital, Newcastle University, Newcastle ²School of Computing at Newcastle University, Newcastle</p>

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17.20 – 17.30	<p>An early postoperative sac radiomic signature associates with 1-year sac non-regression on follow-up after endovascular repair of infrarenal aortic aneurysm</p> <p>Keith Farrell-Dillon¹, Bilal Azhar^{1,2}, Rhodri Furlong¹, Mark Young¹, Iain Roy^{1,2}, Ian Loftus^{1,2}, Peter Holt^{1,2}, James Budge^{1,2} ¹St George's University Hospitals NHS Foundation Trust, London ²St George's University, London</p>		
17.30 – 17.40	<p>Sex-specific comparison of vascular morphology and thrombus burden, adjusting for relative size and concomitant cardiovascular disease burden</p> <p>Anna Pouncey¹, Edmund Charles¹, Ruth Scicluna², Matthew Bown², Manj Gohel³, Linda Sharples⁴, Colin Bicknell¹, Janet Powell¹ ¹Imperial College London, London ²University Hospitals of Leicester NHS Trust, Leicester ³Cambridge University Hospitals NHS Foundation Trust, Cambridge ⁴London School of Health and Tropical Medicine, London</p>		
17.40 – 18.00	<p>THE PRESIDENT'S DEBATE</p> <p><i>Introduced by Martin Claridge</i></p> <p>A 5.5cm abdominal aortic aneurysm is just a marker of atherosclerosis and not a threshold for intervention</p> <table> <tr> <td>FOR: Andrew Garnham</td><td>AGAINST: Bijan Modarai</td></tr> </table>	FOR: Andrew Garnham	AGAINST: Bijan Modarai
FOR: Andrew Garnham	AGAINST: Bijan Modarai		

8.30 – 9.00	ABSTRACT SESSION 3 - (4 + 2 minutes)
	<i>Chairs: Barend Mees, Becky Sandford and Shiva Dindyal</i>
8.30 – 8.36	Defining the demographics of the 'non-dissecting' acute aortic syndromes Will Selway¹ , James Budge ¹ , Dan Carradice ² , Raghuram Lakshminarayan ² , Paul Bevis ³ , Alex Rolls ^{4,5} , Michael Jenkins ⁴ , Peter Holt ¹ , Ian Loftus ¹ ¹ St George's Vascular Institute, London ² Hull Royal Infirmary, Hull ³ North Bristol NHS Trust, Bristol ⁴ St Mary's Hospital, London ⁵ Fiona Stanley Hospital, Perth, Australia
8.36 – 8.42	Utilisation of artificial intelligence (AI) technologies to identify acute aortic syndromes from radiology reports Katarzyna Powezka¹ , Radhika Acharya ¹ , Karin Slater ² , Michael Wall ³ , Georgios Gkoutos ² , Massimo Vezzosi ¹ , Martin Claridge ² , Donald Adam ¹ , Maciej Juszcak ^{1,2} ¹ University Hospitals of Birmingham NHS FT, Birmingham ² University of Birmingham, Birmingham ³ Dudley Group NHS FT, Dudley
8.42 – 8.48	Identifying health inequities in Intermittent Claudication: Natural Language Processing insights into ethnicity, social deprivation, and vascular care Joseph Froud¹ , Madeleine Landin ¹ , Ashish Patel ² , Alberto Smith ² , Jack Wu ³ , Kevin O'Gallagher ³ , Bijan Modarai ² ¹ Guy's and St Thomas' NHS Foundation Trust, London ² Academic Department of Vascular Surgery, St Thomas' Hospital, London ³ School of Cardiovascular and Metabolic Medicine & Sciences (SCMMS) King's College London, London
8.48 – 8.54	A pilot study of sustainability in endovascular surgery – Where does all the packaging go? Hannah Burton , Arindam Chaudhuri Bedfordshire Hospitals NHS Foundation Trust, Bedford
8.54 – 9.00	Comparative readability analysis of traditional and large language model derived patient information leaflets in vascular surgery Matthew Pettit¹ , Iain Roy ¹ , James Budge ² ¹ St George's Hospital, London ² St George's University, London

9.00 – 9.25	VASCULAR SOCIETY SESSION	
	Sustainable endovascular surgery	
	Andrew Garnham, VSGBI President	
	Delivery of the Provision of Vascular Services (POVS) 2021 standards	
	Marcus Brooks, VSGBI Honorary Secretary	
	Protecting patients from harm through robust training standards	
	Patrick Coughlin, VSGBI Education and Training Committee Chair	
9.25 – 9.32	GOLD SPONSOR PRESENTATION: SHOCKWAVE	
	Chairs: Kaji Sritharan and Simon Neequaye	SHOCKWAVE IVL
	Maintaining Options in Iliac Calcification with IVL	
	Ashish Patel, Clinical Senior Lecturer in Vascular Surgery and Consultant Vascular Surgeon, St Thomas' Hospital, London	
9.32 – 9.55	GUEST LECTURE	
	Chairs: Mike Jenkins & Simon Neequaye	
	New kids on the block: novel techniques in treating peripheral arterial disease	
	Caitlin Hicks, Associate Professor of Surgery in the Division of Vascular Surgery at Johns Hopkins University School of Medicine	
9.55 – 10.25	UPDATE ON UPCOMING ENDOVASCULAR TRIALS IN THE UK	
	Chairs: Dave Bosanquet and Rob Hinchliffe	
	Leader-PAD: Rob Hinchliffe	
	EVOCC: Athanasios Saratzis	
	CLARITY: Chris Twine	
	THRIVE: Alun Davies	
	WARRIORS: Colin Bicknell	
10.25 – 11.00	COFFEE	
11.00 – 11.07	GOLD SPONSOR PRESENTATION: TERUMO AORTIC	
	Chairs: Emma Wilton and Paul Moxey	TERUMO Aortic
	Early Experience with the Custom-made Treo fenestrated device	
	Professor F Serracino-Inglott, Consultant Vascular Surgeon, Manchester Royal Infirmary	

11.07 – 11.30	ENDOVASCULAR TRAINING SYMPOSIUM	
	<i>Chairs: Katharine Lewis, Paul Moxey and Keith Jones</i>	
11.07 – 11.12	The US perspective	
	<i>Gustavo Oderich, John P. and Kathrine G. McGovern Professor of Surgery and Distinguished Chair of Vascular and Endovascular Surgery at the University of Texas Health Science Centre at Houston (UTHealth), USA</i>	
11.12 – 11.17	The UK perspective – how we got here	
	<i>Jonathan Boyle, Consultant Vascular Surgeon, Cambridge University Hospitals NHS Trust</i>	
11.17 – 11.22	The future model for all specialties	
	<i>Rob Morgan, Consultant Interventional Radiologist, St George's Hospital and BSIR President</i>	
11.22 – 11.30	DISCUSSION	
11.30 – 11.37	GOLD SPONSOR PRESENTATION: BENTLEY	
	<i>Chairs: Athanasios Saratzis and Andy Wigham</i>	
	The choice and durability of bridging stents in complex aortic repair	
	<i>Said Abisi, Consultant Vascular Surgeon, Guy's and St Thomas' Hospital, London</i>	
11.37 – 12.47	PERIPHERAL PRIZE ABSTRACT SESSION – (7 + 3 minutes)	
	<i>Chairs: Caitlin Hicks, Athanasios Saratzis and Andy Wigham</i>	
11.37 – 11.47	Tailored risk assessment and forecasting in intermittent claudication using machine learning	
	Bharadhwaj Ravindhran¹ , Jonathon Prosser ¹ , Ross Lathan ¹ , Bhupesh Mishra ² , Daniel Carradice ¹ , George Smith ¹ , Dhaval Thakker ² , Ian Chetter ¹ , Sean Pymer ¹ ¹ Hull York Medical School, Hull ² University of Hull, Hull	
11.47 – 11.57	Long term outcomes of hybrid revascularisation for complex peripheral arterial disease	
	Arsalan Wafi , Frederick Ross, Muzzafer AA Chaudery, Trixie Yap, Talia Lea, Sanjiban Mandal, Syed Zaidi, Hany Zayed, Ashish Patel Guy's and St Thomas's NHS Trust, London	
11.57 – 12.07	Mechanical thrombectomy to treat Acute Deep Venous Thrombosis - the Lysis free era	
	Sarah Nduwayo , Samuel Galea, Andrew Wigham, Emma Wilton Oxford University Hospital NHS Trust, Oxford	

12.07 – 12.17	Utility of hand grip strength in predicting mortality risk in chronic limb-threatening ischaemia
	Kirsten Goves¹ , Amirah Essop-Adam ¹ , Imelda Black ¹ , John Houghton ^{1,2} , Rob Sayers ^{1,2} , Victoria Haunton ³ ¹ University of Leicester, Leicester ² University Hospitals of Leicester NHS Trust, Leicester ³ University of Plymouth, Plymouth
12.17 – 12.27	Outcomes of open surgical, hybrid and endovascular management of lower limb acute limb ischaemia
	Arsalan Wafi , Mustafa Musajee, Gabi Kaneta, Rachel Bell, Ashish Patel Guy's and St Thomas's Hospital, London
12.27 – 12.37	Temporal changes and determinants of Quality of Life in patients with Chronic Limb Threatening Ischaemia
	Segun Lamidi^{1,2} , Imelda Black ¹ , Anna Meffen ¹ , Sarah Nduwayo ¹ , Andrew Nickinson ¹ , Amirah Essop-Adam ¹ , Sarah Jane Messeder ¹ , Rob Sayers ^{1,2} , John Houghton ^{1,2} ¹ University of Leicester, Leicester ² University Hospitals of Leicester NHS Trust, Leicester
12.37 – 12.47	Covered Endovascular Reconstruction of Aortic Bifurcation (CERAB) learning curves at a tertiary referral centre
	Keith Farrell-Dillon¹ , James Budge ^{1,2} , Paul Moxey ¹ , Joo-Young Chun ¹ , Iain Roy ^{1,2} , Bilal Azhar ^{1,2} , Mital Desai ^{1,2} , Ian Loftus ^{1,2} , Peter Holt ^{1,2} , Mohamed Abdelhamid ¹ ¹ St George's University Hospitals NHS Foundation Trust, London ² St George's University, London
12.50 – 13.10	CHEE SOONG MEMORIAL LECTURE
	<i>Introduced by Bijan Modarai</i>
	Vascular Surgery: Reflections from 30 years
	<i>Julian Scott, Professor of Vascular Surgery, Leeds Teaching Hospital NHS Trust</i>
13.10 – 13.15	PRESENTATION OF PRIZES AND CLOSE
13.15 – 14.30	LUNCH



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ABSTRACT SESSIONS



Long-term survival and reintervention following thoracic endovascular aortic repair in blunt traumatic thoracic aortic injury: A systematic review and meta-analysis

Aya Hammad¹, Matti Jubouri¹, Abdelaziz O. Surkhi², Mohamad Bashir³

¹University of York, York

²Faculty of Medicine, Al-Quds University, Jerusalem, Palestine

³Velindre University NHS Trust, Cardiff

Background

Blunt thoracic aortic injury (BTAI) represents one of the most devastating scenarios of vascular trauma. Different management strategies are available with varying clinical outcomes. However, thoracic endovascular aortic repair (TEVAR) has become the first-line option for most BTAI patients, mainly owing to its minimally invasive nature, yielding improved immediate results. This meta-analysis aims to investigate mortality, long-term survival, and reintervention following TEVAR in BTAI.

Method

A systematic review conducted a comprehensive literature search on multiple electronic databases using strict search terms. Twenty-seven studies met the set inclusion/exclusion criteria. A proportional meta-analysis of extracted data was conducted using the Comprehensive Meta-Analysis Software v.4.

Results

1498 BTAI patients who underwent TEVAR were included. Using the SVS grading system, 2.6% of the population had Grade 1 injuries, 13.6% Grade 2, 62.2% Grade 3, 19.6% Grade 4, and 1.9% unspecified. All-cause mortality did not exceed 20% in all studies except one outlier with a 37% mortality rate. Using the random-effects model, the pooled estimate of overall mortality was 12% (95%CI 5.35-8.55%; I² = 70.6%). This was 91% (95%CI, 88.6-93.2; I² = 30.2%) at 6 months, 90.1% (95%CI, 86.7-92.3; I² = 53.6%) at 1-year, 89.2% (95%CI, 85.2-91.8; I² = 62.3%) at 2 years, and 88.1% (95%CI, 83.3-90.9; I² = 69.6%) at 5 years. Moreover, the pooled estimate of reintervention was 6.4% (95%CI, 0.1-0.49%; I² = 81.7%).

Conclusion

Despite the high morbidity and mortality associated with BTAI, TEVAR has proven to be a safe and effective management strategy with favourable long-term survival and minimal need for reintervention. Nevertheless, diagnosis of BTAI requires a high index of suspicion with appropriate grading and prompt transfer to trauma centres with appropriate TEVAR facilities.

The association between social deprivation and survival after ruptured aortic aneurysms in a UK population

James Budge¹, **Keith Farrell-Dillon**², Oliver Rees², Bilal Azhar¹, Iain Roy², William Selway², Barnaby Farquharson², Aurelien Gueroult², Ian Loftus², Peter Holt¹

¹St George's University of London, London

²St George's University Hospitals NHS Foundation Trust, London

Background

Social deprivation is associated with presentation of ruptured Abdominal Aortic Aneurysms (rAAA) in USA populations, this association has not been demonstrated in the UK. This study aims to examine the relationship between social deprivation and survival of rAAA in the UK.

Method

All ruptured aortic aneurysms from a tertiary teaching hospital from 2015 to 2019 were identified. Demographics, operative or palliative management, 30-day mortality, Harborview rAAA mortality risk score domains (Age at presentation, pH, lowest systolic blood pressure and creatinine; 4 domains), and patient's social deprivation (Index of Multiple Deprivation) was retrospectively collected. Logistic regression was performed to test the association between social deprivation and mortality. Chi-squared testing was utilised to examine the association between Harborview rAAA mortality risk score and social deprivation.

Results

214 patients were identified, median age 79, 75.7% male, and mortality rate of 57%. 91 (42.5%) patients were palliated, 65 (30.4%) underwent EVAR, 21 (9.8%) TEVAR, 12 (5.6%) complex EVAR and 25 (11.7%) redo repair. The mortality rate in the EVAR group was 29.2%, 9.5% for TEVAR, 16.7% for complex EVAR, 32% for redo cases, and 100% those palliated. Social deprivation was significantly associated with in-patient mortality ($p=0.026$), with greater deprivation being associated with higher mortality rates. A difference was found between levels of deprivation and presenting Harborview rAAA mortality risk score ($p=0.001$).

Conclusion

Increased social deprivation is strongly correlated with risk of in-patient death in this study. Social deprivation is also associated with severity of presentation as measured by Harborview rAAA mortality risk score.

Multimodality approach to the repair of chronic post-dissection thoracic and thoracoabdominal aortic aneurysms

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Background

A multi-disciplinary approach offering open surgical (OSR) and endovascular repair (EVAR) is essential for the management of chronic post-dissection descending thoracic (DTA) and thoracoabdominal aortic aneurysms (TAAA). This study reports the early and mid-term outcomes in a United Kingdom aortic centre.

Method

Retrospective study of patients treated between January 2010 and December 2022. Low risk patients were offered OSR, and EVAR employed in anatomically suitable higher risk patients. Primary endpoint was 30-day/in-hospital mortality. Secondary endpoint was Kaplan-Meier estimates of mid-term survival.

Results

130 patients with residual DeBakey I (n=47) and DeBakey III (n=83) aneurysms underwent repair (OSR 84, EVAR 46; 87 elective, 43 non-elective) with a 30-day mortality of 6.2% (n=8; elective 5.7%, non-elective 7%). 30-day mortality after OSR was 8.3% [elective 9.6% (5/52), non-elective 6.3% (2/32)] and after EVAR was 2.2% [elective 0% (0/35), non-elective 9.1% (1/11)]. Estimated survival (SE) at 5 years for the entire cohort was 74.0% (4.0%) and was significantly better after OSR [82.9% (4.2%) vs. EVAR 56.3% (8.0%); OR 0.32 (0.17;0.61); $p < .001$] but was not related to DeBakey type [OR 0.93 (0.48;1.80); $p = .83$] or acuity of presentation [OR 1.09 (0.56;2.13); $p = .8$]. The 5-year freedom from re-intervention was 66.3% (4.6%). There was no significant difference related to treatment modality [OR 0.58 (0.3;1.1); $p = .09$], DeBakey type [OR 1.3 (0.69;2.46); $p = .42$] or presentation [OR 0.99 (0.52;1.89); $p = .97$].

Conclusion

A multi-disciplinary approach offering OSR and EVAR can deliver good early and mid-term outcomes. OSR is associated with improved mid-term survival. There was no difference between treatment modalities regarding late re-intervention rates.

Long-term outcomes of Fenestrated Endovascular Repair (FEVAR): a GLOBALSTAR registry study, preliminary results

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Background

GLOBALSTAR is a registry of 1229 complex EVAR (UK, 2003-2022); it represents a largest mature dataset for FEVAR. The aims of this study are to report long-term outcomes for survival and freedom from re-intervention for FEVAR.

Method

For this study of GLOBALSTAR, inclusion criteria were: all aneurysm morphologies, custom-made FEVAR. Exclusion criteria were: dissection, other complex EVAR techniques (BEVAR, ChEVAR). Time-to-event analyses were conducted for survival and freedom from re-intervention. A cox proportional hazards model was applied to survival for all pre-operative variables. A 10% Pocock threshold was applied to determine data maturity.

Results

757 patients were included in this analysis from 6 different centres. Median age was 75.4 years [69.2-79.7 IQR] and 88.0% patients were male. This population had significant co-morbidities including 42.9% ischaemic heart disease. Data maturity reached 10 years and estimated survival [n= 757] at 3, 5 and 10 years were 82.3% [79.6-85.1%, 95% CI], 66.4% [63.0-70.0%] and 36.0% [31.8-40.9%]. Median survival was 7.1 years. Data maturity reached 8 years and estimated freedom from re-intervention [n= 564] at 3, 5 and 8 years were 80.3% [76.8-83.9%], 73.9% [69.8-78.2%] and 68.4% [63.3-74.0%]. Mean time to reintervention was 3.9 years. Cox proportional hazards analysis demonstrated a significant increase in risk of mortality of 90% for octogenarians [1.4-2.5, 95% CI, p< 0.0001] and 3.2% per 10 units of creatinine [1.01-1.05, 95% CI, p< 0.01].

Conclusion

These preliminary results demonstrate study feasibility and its potential impact on understanding of long-term outcomes and durability of FEVAR.

Stent Migration following EVAR: predicting migration in contemporary practice

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Background

Significant heterogeneity in the published definitions of stent-graft (SG) migration following EVAR, the failure in addressing all its contributing factors and in predicting subsequent SG migration, following intervention, warrants a standardised and more representative definition, with subsequent analysis of contemporary practice.

Method

A retrospective review of infrarenal EVAR's from two vascular tertiary referral centres from 2008-2018, was undertaken. Patient baseline demographics, anatomical measurements, procedural details and subsequent radiological and clinical follow up and aortic reinterventions were recorded. 5mm of caudal displacement of any part of the proximal SG, was categorised as radiological significant migration (RSM) and those migrating >10mm or migrating with a loss of proximal seal were recorded as clinically significant migration (CSM).

Results

20.7% (48/232) were found to have RSM and 14.7% (34/232) CSM, over a median follow up of 66 months (18-120months). Pre-operative predictive factors for CSM were AAA size (61.2 vs 66.7, $p=0.021$), Aortic diameter 5 and 10mm below the lowest renal artery (24.4 vs 27mm $p=0.000$), post-operative endo-leak (15 vs 38%, $p=0.00$) and degree of SG tilt (11vs17°, $p=0.035$). Sub-analysis of migratory patterns found that cases found to migrate at least 5mm within 18 months post-intervention were more likely to have CSM, (Positive-Predictive-Value 81.5%, Negative-Predictive Value 94.1%).

Conclusion

SG migration is a long-term complication which persists, despite advancements in technology, adherence to IFU, and patient selection. Predictive risk factors are in-keeping with previous literature. However, these long long-term complications may be identified early with the employment of a CT angiogram, 18 months post intervention.

Unstented coeliac axis in custom-made 4-vessel FEVAR is safe and durable

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Background

In fenestrated endovascular grafts for juxta-renal and thoraco-abdominal aortic aneurysm repair, covered stents to the visceral vessels provide continuity between graft and target vessel to maintain perfusion and prevent endoleak. This study explores the need to routinely stent the coeliac axis in 4-vessel FEVAR.

Method

A retrospective review of all 4-vessel FEVAR performed at our institution was conducted. Kaplan-Meier analyses were performed and outcomes between stented and unstented coeliac axis groups were compared. Radiation dose, as measured by dose area product, was compared between the groups using Mann-Whitney U test.

Results

117 4-vessel FEVAR (98 male, median age 74 years, range 41-87 years) were performed between December 2008 and November 2022. A custom-made Cook Zenith® Fenestrated endovascular graft was used in all cases, with balloon-expandable covered stents to the visceral vessels. Median follow up was 2.47 years, range 0-11 years. 25 patients had a stented coeliac axis, and 92 patients an unstented coeliac fenestration. There was no significant difference between the two groups for intra-operative total radiation dose ($p=0.39$), and Kaplan-Meier event analysis for target vessel patency ($p=0.44$), coeliac patency ($p=0.23$), endoleak detection ($p=0.49$), any reintervention ($p=0.09$), stable sac size ($p=0.09$) and all-cause mortality ($p=0.17$). There was only one type 2 endoleak from an unstented coeliac axis, which did not require reintervention.

Conclusion

It is both safe and durable to leave the coeliac axis unstented in 4-vessel FEVAR, which may reduce case complexity, with no increased risk of visceral vessel occlusion, endoleak, reintervention, sac expansion or mortality.

Which stents perform best in the common femoral artery? An analysis of a consecutive series of 55 cases

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Background

Common femoral artery (CFA) endarterectomy has good patency but is associated with significant infection related complications. Percutaneous treatment using stents is showing promising results. There is a lack of data on which stent are best for this location considered traditionally as a flexion point. The purpose of this study is to present a single centre UK experience with common femoral artery stenting.

Method

Data was collected prospectively on consecutive patients undergoing CFA stenting between – February 2010 and December 2023. Data included patient demographics, co-morbidities, indications for intervention and procedural data. Primary patency was assessed based on imaging on follow-up or clinical examination. Survival analysis was conducted comparing self-expanding to balloon-expandable stents.

Results

Overall, CFA intervention was attempted in 65 patients, 70% of whom were men. Patients had a median age of 74 years old. 47 patients had stenosis, 12 had total chronic occlusion and 7 had an aneurysm. 6 patients have undergone angioplasty only and 55 patients had stenting, procedure was abandoned in 2 patients where lesion could not be crossed. 3 patients received bare-metal self-expanding stents, n=23 covered, self-expanding stents, n=19 covered, balloon-expandable stents, and n=10 had a balloon-expandable bare-metal stents. Self-expanding stents (n=29) (covered and bare) had a mean patency of 23 (4.68) months, vs balloon-expandable (n=26), 19 (3.47) months, $p = 0.666$.

Conclusion

Endovascular treatment of common femoral artery is a feasible option for revascularization. Stenting was performed with a high technical success rate. Balloon-expanding stents did not differ in patency rates from self-expanding stents.

Toward a core outcome set for intermittent claudication: A systematic review of reported outcomes

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Background

This review aimed to compile an exhaustive list of all outcome measures and identify different characteristics of the outcomes reported in studies of intermittent claudication as the first step in developing a core outcome set (COS) for intermittent claudication.

Method

Medline and Embase were searched for all studies including individuals with intermittent claudication and reporting ≥ 1 outcome from January 2015 to February 2023. Abstract, full text screening, and data extraction were performed by two investigators independently. All reported outcome measures were extracted verbatim and categorised by Dodd's taxonomy of outcomes classification. (COMET registration: COMIC Study, 1590).

Results

A total of 4,382 studies were screened, and 343 were included. A total of 2038 outcomes were extracted and 504 unique outcomes across 24 Dodd's domains were identified. Ankle-Brachial Pressure Index was the most frequently reported outcome followed by Primary Patency and Rutherford Classification. 360 unique outcomes were reported by only one study. Patient-reported Outcome Measures (PROMs) comprised only 10% of all reported outcomes and were not reported in almost 2/3 of all the studies. There were wide variations in the definition of commonly used outcome measures across different studies.

Conclusion

There is substantial heterogeneity in reported outcomes in studies of intermittent claudication limiting comparison of different studies and making pooling data extremely challenging. Most reported outcomes are clinical/physiology oriented than patient centred. Development of COS for Intermittent Claudication is vital to improve and standardise reporting in studies of intermittent claudication.

The natural history of Splenic Artery Aneurysms: A decade's experience at a large tertiary vascular centre

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Background

Splenic artery aneurysms (SAAs) are the commonest visceral artery aneurysm. Their natural history is poorly defined and evidence for surveillance and management is weak. We present one of the largest retrospective series of patients with SAA.

Method

Radiology records at a single large tertiary vascular centre were searched for all patients reported to have SAA between 2012 and 2021 inclusive. These were combined with electronic patient and radiology records, with demographic, clinical and follow-up data extracted.

Results

170 patients with SAA were identified, 73% female with a mean age of 71 years (SD 14.1) at index scan. Mean SAA size on index scan was 15.2mm (range 7 -105), 56% were calcified, 5% thrombosed and 1% pseudoaneurysmal. Twenty patients (mean index size 16.5mm) underwent surveillance locally. Surveillance patients underwent a mean of 1.75 surveillance scans, with a mean interval of 22 months between CTs. One surveillance patient underwent intervention. The average growth of SAAs was 0.33mm/year across a mean follow-up of 38 months. Five SAAs underwent intervention, 1 under surveillance, 4 de-novo: 2 for rupture. Four were treated with coil embolization (1 requiring repeat intervention with N-butyl cyanoacrylate) and 1 by splenectomy. Only 2 ruptures occurred, a 9mm pseudoaneurysm and a 19mm SAA, neither under surveillance, both were treated successfully. There were no SAA related deaths.

Conclusion

SAAs are predominantly diagnosed in elderly female patients. They grow slowly, taking on average 30 years to grow 10mm. This should be taken into consideration when deciding the frequency and duration of surveillance.

Rate and predictors of disease progression to chronic limb-threatening ischaemia in patients with non-surgically managed intermittent claudication: a systematic review

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Background

Intermittent claudication (IC) is a common pathology, affecting 4.5% of the UK population, and is associated with significant health burden if disease progresses to chronic limb-threatening ischaemia (CLTI), characterised by the development of rest pain, tissue loss or gangrene lasting >2 weeks. The natural history of non-surgically managed IC remains poorly described, and this study aimed to examine the rate and predictors of progression from IC to CLTI.

Method

Systematic review (PROSPERO ID:CRD42023401259) in accordance with PRISMA guidelines of available literature using Scopus, World of Science, Medline, Embase, and CINAHL databases. Adult patients with IC managed non-surgically were included. Progression rate was defined as percentage of IC patients developing CLTI within a pre-specified timeframe. Predictors identified from uni/multivariate analyses were included.

Results

Search terms yielded 6,404 unique reports. Nine studies (7 retrospective and 2 prospective cohort) of 4,115 patients were included in primary synthesis, three in secondary synthesis. All were non-randomised cohort designs. ROBINS-I risk of bias was assessed as "moderate" in 5 of 9 studies, and "serious" in the remaining 4. Reported rates of progression to CLTI varied widely, between 1.1%-30% over 2-10 years of follow-up. Predictors were advanced age, diabetes, haemodialysis, smoking, serum low-density lipoprotein, HbA1c, and baseline severity of ischaemia.

Conclusion

There remains a paucity of high-quality studies focusing on understanding the progression of non-surgically managed IC. Recent evidence suggests that progression rates may be higher than previously thought. The predictors included provide a rationale for future study and may represent targets for healthcare provision.

A retrospective study of the rate of complications in infra-inguinal angioplasties: SFA vs CFA percutaneous approach

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Background

Peripheral vascular disease (PVD) affects a significant proportion of the population. This study investigates the safety and efficacy of infra-inguinal angioplasty via antegrade puncture of the common femoral artery (CFA) compared to the superficial femoral artery (SFA) in a District Hospital.

Method

Retrospective data analysis was conducted on patients undergoing antegrade infra-inguinal angioplasties between 05/01/2016 and 21/12/2016. Of the 173 patients, 124 (79%) underwent CFA puncture, and 32 (21%) underwent SFA puncture. The UVZPF system verified the puncture site, and complications were identified through outpatient letters, Electronic Discharge Documents (EDDs), and follow-up scans.

Results

Major access-related complications necessitating hospitalization or additional invasive procedures were absent in both groups. While the SFA approach exhibited slightly higher rates of minor complications, including failed attempts and hematoma/fluid collection, compared to CFA puncture (9.4% vs. 7.3%, and 3.1% vs. 1.6%, respectively), it also demonstrated a lower risk of bleeding (0% vs. 2.4%). No cases of pseudoaneurysm formation were reported in either group.

Conclusion

Study showed no major access related complications in patients undergoing infra-inguinal angioplasty for PVD, via puncture of either the SFA or the CFA. Recommendations include considering a lower threshold for SFA puncture in hostile groins. This study contributes valuable insights into the safety of SFA puncture as an alternative access route for infra-inguinal angioplasties, emphasizing the need for further research and consideration of patient-specific factors in decision-making by interventionists.

Long term aortic remodelling outcomes for acute Type B Aortic Dissection

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Background

Strategies for the acute management of type B aortic dissection are pushing towards earlier endovascular intervention with the aim of greater aortic remodelling. This study aims to investigate aortic remodelling outcomes for Thoracic Endovascular Aortic Repair (TEVAR) and conservative management for acute TBAD.

Method

All patients presenting with acute TBAD between 2012-2022 at our centre were retrospectively identified. Computed tomography (CT) imaging at 1 year post primary admission and final surveillance scan obtained for analysis using three-dimensional reconstruction software 3mensio (Pie Medical Imaging, Maastricht, Netherlands).

Results

A total of 144 patients presenting with appropriate follow up imaging identified. 74 (52.7%) patients managed with TEVAR and 70 (48.6%) patients managed conservatively. Median time to 1 year scan 13 (9-17) months and final scan 35 months (24-57). At 1 year positive aortic remodelling identified in 47 (63.5%) patients in TEVAR group and 29 (41.4%) in conservative group ($p<0.001$); increased false lumen thrombosis in 57 (77%) of TEVAR group and 11 (15.3%) in conservative group ($p<0.001$). At final scan positive aortic remodelling found in 33 (62%) TEVAR patients and 9 (22%) in conservative group ($p<0.001$); false lumen thrombosis 37(69%) TEVAR group and 10 (26.3%) conservative group ($p<0.001$). At 1 year false lumen reduced in size in TEVAR group whereas in conservative group it increased ($p<0.001$). At final scan maximum aortic diameter was greater in conservative group (45.2mm) than TEVAR (43.0mm) ($p=0.25$).

Conclusion

Endovascular intervention induces favourable long term aortic remodelling in comparison with conservative management in patients presenting with acute TBAD.

Biological effects of radiation exposure in patients treated with X-ray guided endovascular aortic repair

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Background

Endovascular aortic repair (EVAR) exposes the patient to significant amounts of radiation. Studies have suggested a higher incidence of cancer in these patients compared with those who have had open aneurysm repair, but evidence is inconclusive. We investigated biological sequelae of radiation exposure, including markers of genomic instability, in patients after complex EVAR using advanced cytogenetics techniques and gene expression.

Method

Lymphocytes were isolated from patients after (branched/fenestrated) EVAR and non-irradiated controls. Dicentric chromosomes (DC), chromosomal aberrations caused by irradiation and linked to cancer, were enumerated. γ -H2AX, a marker of acute DNA damage/repair, was measured by immunofluorescence after in-vitro irradiation at 0.2Gy and 1Gy. Expression of radiation-responsive genes (FDXR, CCNG1, P21 and PHPT1) was measured by qPCR following irradiation.

Results

Seventeen patients (82% male, age 73[59–85years]) and fifteen controls (60% male, age 68[53–83years]) were recruited. The mean incidence of DC was 3.782, 95% CI[3.134, 4.429] and 0.936, 95% CI[0.490, 1.382] per 1000 cells for patients and controls, respectively ($p < 0.0001$). Patients had higher Background of γ -H2AX foci than controls, (0.7056, 95% CI[0.3163, 1.095] vs 0.2413, 95% CI[0.0774, 0.4051]) per cell, ($p < 0.05$). FDXR was the most radio-responsive gene ($p < 0.0001$), but no statistical significance was found between the two groups.

Conclusion

This is the first study to show a raised frequency of dicentrics in patients after complex EVAR, a biological finding that may support a propensity to developing malignancies. A higher Background DNA damage/repair activity was also found in this population, evidenced by an increased baseline expression of γ -H2AX.

Interim MRI Results of patients in INTERCEPTevar trial: multicentre pilot randomised controlled trial of carbon dioxide flushing versus saline flushing of thoracic aortic stents

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Background

TEVAR carries a 3-6% stroke risk, including 'silent' brain infarction (SBI). Stent grafts retain air despite saline flushing. CO₂ can be used in addition to saline to de-air stents and reduce bubble formation. This pilot trial aims to investigate the neuroprotective benefit against SBI with the use of CO₂ flushed aortic stent grafts.

Method

Multicentre pilot RCT taking place in the UK, USA and New Zealand. Patients will be randomised (1:1) to TEVAR- CO₂ or TEVAR-Saline, stratified according to TEVAR landing zone. This abstract will focus on the Results of the first 10 participants in the UK who underwent inpatient MRI post randomisation.

Results

Seven cases were randomised to TEVAR- CO₂ with three in TEVAR-Saline. Zone 1 TEVARs showed no infarcts in the CO₂ arm. Zone 2 TEVAR mean infarct of 2.3 with CO₂ vs 4 in saline, mean volume of infarcts 22 vs 28mm². Zone 3 TEVARs mean infarcts 1 in CO₂ vs 0 in saline, mean volume of 2 vs 0mm². Zone 4 TEVARs mean infarct rate of 0.5 CO₂ vs 2 in saline, reduced volume of 3 vs 8mm². Combined mean of 0.5 infarcts in TEVAR-CO₂ vs 2 in TEVAR-Saline. Mean volume of infarcts in all zones also reduced at 3.9 in TEVAR-CO₂ vs 12 in TEVAR-Saline.

Conclusion

The Results suggest that CO₂ flushing reduces the number and volume of infarcts DW-MRI infarcts. Further recruitment and analysis is necessary to discern the clinical impact of this within the trial, and is this association reaches statistical significance.

Machine learning algorithm development for longitudinal sarcopenia assessment of perioperative complex endovascular aortic aneurysm repair

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Background

Sarcopenia, characterised by muscle mass and function loss, is associated with adverse surgical outcomes. This study aims to develop a machine learning (ML) algorithm to assess sarcopenia's impact on complex endovascular aortic aneurysm repair outcomes.

Method

Patients underwent Fenestrated Endovascular Juxtarenal (FEVAR) and Thoracoabdominal Aortic Aneurysm (TAAA) repair using thoracic and fenestrated/branched aortic repair (TEVAR+FEVAR/BEVAR) were included in the study. Peri-operative CT scans were used for radiological sarcopenia assessment at 3rd lumbar vertebra level. The ML algorithm was developed using Transfer Learning and Self-Supervised Learning for qualitative and quantitative sarcopenia assessment and validated against manual measurements.

Results

Among 229 patients, 184 underwent FEVAR and 45 underwent TAAA repair from 2007 to 2022 at Freeman Hospital, Newcastle. TAAA patients were younger (71 vs. 75years, $P=0.03$) but had shorter survival (2.8 vs. 4.8years, $P=0.03$). Lumbar artery coverage percentages were comparable (64.3% vs. 60%, $P=0.07$). Neural network accuracy ranged from 0.82 to 0.89, with a Dice coefficient of 0.64 for mask prediction. Sarcopenia deteriorated within 3 months post-intervention for both groups ($p<0.0001$, for both). Recovery took 3 years after FEVAR and one year after TAAA repair. Pre-operative sarcopenia predicted post-operative sarcopenia ($P=0.001$). Peri-operative sarcopenia did not affect post-operative complications or 2-year survival. Sarcopenia levels at 3 months, 1 year, and 2 years post-operation predicted 5-year survival ($P=0.02$).

Conclusion

The ML algorithm effectively assesses sarcopenia in complex aortic aneurysm repair. Despite being minimally invasive, interventions exacerbate sarcopenia post-operatively. Sarcopenia levels serve as robust predictors of patient survival following these procedures.

An early postoperative sac radiomic signature associates with 1-year sac non-regression on follow-up after endovascular repair of infrarenal aortic aneurysm

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Background

Endovascular repair of infrarenal aortic aneurysm (EVAR) is followed by lifetime surveillance to monitor for endoleak and sac expansion. Sac dynamics 1 year post-op have previously been binarized into 'regressors', defined by ≥ 5 mm standardised diameter reduction, and 'non-regressors', with significantly increased risk of sac expansion and re-intervention. We queried if a radiomic signature on early postoperative CT angiography associated with 1-year clinically relevant sac non-regression.

Method

All infrarenal EVAR procedures performed at a tertiary centre between 1st Jan 2019 and 1st Oct 2023 were identified from electronic notes, and intervention and follow-up data collected retrospectively. Patients presenting with rupture, inflammatory aneurysm or who received adjunctive devices were excluded. In early (20-70 days) post-operative CT angiography, the axial slice of maximal anterior-posterior residual sac diameter was segmented and radiomic features extracted, then logistic regression performed against binarized sac dynamics.

Results

254 patients underwent infrarenal EVAR, 222 with follow-up CT angiography, 137 met 'early CT' criteria (median 44 days). 91 met follow-up criteria, binarized as sac regressors (41) or non-regressors (50). Non-regression associated with type II endoleak on CT angiography (40% non-regressors, 12% regressors). Reintervention was more frequent in non-regressors (risk ratio 3.28). Logistic regression with sac outcome as the dependent variable produced a model with area-under-curve of 0.88, with largest model coefficients associated with slice segment mean, texture complexity and first-order distribution kurtosis.

Conclusion

These data suggest an early post-operative radiomic signature of sac non-regression, a potential positive marker of endotension, and a model for prospective validation

Sex-specific comparison of vascular morphology and thrombus burden, adjusting for relative size and concomitant cardiovascular disease burden

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Background

Women with an infrarenal abdominal aortic aneurysm (IRAAA) are less likely to meet instructions for use (IFU) criteria for endovascular repair (EVAR) and more likely to suffer technical and thromboembolic complications. Anatomical sex-differences likely contribute, but previous comparisons using IRAAA diameter do not account for the smaller aortic calibres in women. Adjustment for aortic size index and concomitant cardiovascular disease burden may provide more accurate comparison.

Method

Multi-centre retrospective cohort study using fully automatic volume segmentation (FAVS) to examine pre-operative imaging for elective IRAAA repairs (2013-2023). Nearest-neighbour propensity score matching was used, adjusting for aortic size index (ASI), cardiovascular risk factors, medications, and repair-type. Pre-specified morphological variables, aortic wall thrombus (AWT) index and "within-IFU" criteria for neck and access were compared between sexes.

Results

From 1026 patients, 128 women were matched to 512 men. Women and matched-men had similar ASI (3.33 [2.94,3.79] vs 3.26 [2.88,3.68], $p=.300$) and no difference vessel stenosis, calcification, or tortuosity. Women had greater relative-thrombus burden (AWT index: thoracic aorta, $p=.010$; superior mesenteric artery, $p<.001$), and were less likely to be within-IFU for neck criteria (13.38% vs 12.50%, $p.002$), due to shorter, narrower, more angulated necks (39.92° [30.61,50.55] vs 34.73 [26.21,43.86], $p<.001$). Visceral and access artery diameters were smaller ($p<.001$), meaning women less often met IFU-access criteria (45.31% vs 18.95%, $p<.001$).

Conclusion

Adjustment for ASI and cardiovascular disease burden did not mitigate sex-specific differences in AWT index, neck angulation or vessel diameters. Therefore, sex-specific device design is key to reduce inequity for EVAR.

Defining the demographics of the 'non-dissecting' acute aortic syndromes

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Background

Guidelines for the management of type-B IMH and PAU are currently based upon those for aortic dissection. Whilst under the spectrum of acute aortic syndrome, they are individual processes, and patient demographics for each condition may be vastly different which may influence management outcomes. This study defines the demographics for patients with type-B IMH and PAU.

Method

From a multi-centre UK-based study of 210 patients with type-B IMH or PAU, both patient demographics and details of multi-morbidity were established at the point of admission. CT imaging at admission confirmed the pathology and subgroups, by pathology, were assessed for differences in demographics and multi-morbidity.

Results

From 210 patients there were 112 PAU (53.3%) and 94 IMH (44.7%). Within PAU, 26.7% had associated IMH (n=30). Hypertension and smoking were major risk factors for 74% and 52.4% respectively. Patients with PAU tended to be male (n=60, 28.6%, $p=0.004$) with hypertension (n=69, 81.2%, $p=0.006$) and coronary artery disease (n=52, 61.2%, $p<0.001$). Patients with IMH were more likely female (53.2%) with more advanced age than males, median 77.3 years (IQR 68.5, 84.1) versus 68.5 years (IQR 59.1, 76.5) $p<0.001$. There were fewer atherosclerotic cardiac risk factors in the female IMH cohort with lower incidence of known hypertension (n=59, 63.4%, $p=0.006$).

Conclusion

The different patient demographics for IMH and PAU identified improve the understanding and may aid development of specific treatment strategies. IMH are likely older females with lower atherosclerotic risk factors whilst PAU occur in older males with more typical cardiac risk profiles

Utilisation of artificial intelligence (AI) technologies to identify acute aortic syndromes from radiology reports

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Background

The incidence of Acute Aortic Syndrome (AAS) is reported to be between 4.4 to 7.2 cases per 100,000/year. The efficiency of referral of AAS to specialist care teams and to research studies is poor. The machine learning using natural language processing can enhance and automate this process utilising radiology reports as input. We aimed to develop ML algorithm utilising Natural Language Processing to identify cases with AAS, and to analyse epidemiology, short-term and long-term outcomes of patients with AAS managed in the single quaternary vascular centre over the last decade.

Method

We screened radiology reports from the University Hospitals Birmingham NHS Foundation Trust from 2011 to 2021. Cases were labelled manually as AAS, chronic aortic dissection and suspected acute aortic syndrome to train and test machine learning algorithm. We collected data on epidemiology, demographics, clinical outcomes.

Results

We screened 114,378 radiological reports of CT scans, and identified 256 patients with AAS, 416 cases of chronic aortic dissections, and 2021 cases of suspected acute aortic syndromes. Most patients were male; the average age was 61.8 [IQR]. Majority of patients presented with DeBakey I aortic dissection. Developed ML algorithm was trained on 70% of selected radiology reports and tested on the remaining 30%. The fidelity of the developed ML algorithm was acceptable with accuracy exceeding 80%.

Conclusion

Machine Learning utilising NLP can be used to identify these conditions from radiology reports.

Identifying health inequities in intermittent claudication: Natural language processing insights into ethnicity, social deprivation, and vascular care

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Background

Intermittent claudication (IC) is a common pathology, affecting 4.5% of the UK population. Predictors of IC progression and complications including amputation, such as smoking history and diabetes, have been described. However, little is known about the impact of ethnicity and social deprivation. This study leverages Natural Language Processing (NLP) based interrogation of electronic health records to identify the impact of health inequities in IC.

Method

Retrospective cohort study of patients with IC at a large, tertiary vascular referral centre identified using the SNOMED term of IC in the Medcat-NLP-AI toolkit. Demographics, Index of Multiple Deprivation (IMD), and indicators of disease progression and amputation were analysed using Kaplan-Meier survival and Cox regression.

Results

5,027 patients (Mean age 73.7(61.8-85.6), Males 66.1% (n=2,781) were identified. Self-reported population ethnicity was 4.72% Asian, 15.5% Black, 79.7% White. All-cause mortality was 19.5% (n=979), with 5.85% of patients progressing to CLTI (n=294). Progression rates were comparable for Black (5.78%) and White (5.04%) patients. Rates of amputation were higher in Black (8.99%) patients, than White (7.36%) and Asian (5.09%) patients. Black ethnicity approached significance (P=.055) as a predictor for amputation in univariate analysis (HR 1.88 (.99, 3.60 95%CI)). Amputation rates in the most deprived (IMD1 9.22%) were higher than in the least deprived (IMD5 6.30%).

Conclusion

Disparities in amputation rates may exist between ethnicities within a universal healthcare system, although our sample size was insufficient to demonstrate statistical significance. A larger, multicentre analysis is warranted. NLP holds potential to identify health inequities and refine management algorithms.

A Pilot Study of Sustainability in Endovascular Surgery – Where does all the packaging go?

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Background

Sustainable surgery is an ever-growing topic of interest due to the threat of climate change to our global community. Surgery is resource exhaustive with operating theatres contributing 25% of a hospital's carbon footprint. A recent increase in endovascular aortic aneurysm repair (EVAR) has resulted in an expanding market of stent-grafts, which inevitably means more packaging. We aim to address the impact of EVAR packaging and examine disposal methods.

Method

To assess packaging sustainability, we reviewed EVAR packaging from 4 different companies' devices at our institution that might reflect common usage. All packaging for the main body and two limbs including additional leaflets were documented.

Results

Of the 4 companies examined the packaging for each EVAR component contained 5-7 elements to hold one device. The majority of materials were classed as recyclable; however no packaging displayed the universal symbol for recyclable and not all were disposed of appropriately.

Conclusion

This pilot observational study has highlighted that the majority of EVAR packaging can be recycled but is often not disposed of in a sustainable manner. We are addressing a real-life concern which needs analysis to propose a framework to mitigate the environmental effects of endovascular surgery. Lack of recycling and inappropriate incineration has substantial harmful environmental consequences. We should follow the Intercollegiate Green Theatre Checklist for guidance and could consider making packaging from recycled materials. Individual departments alongside regional/national bodies should discuss with manufacturers about modifying our practice of endovascular device packaging and thus help protect our environment and healthcare system.

Comparative readability analysis of traditional and large language model derived patient information leaflets in vascular surgery

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Background

Generative artificial intelligence, in the form of large language models (LLMs), is increasingly used by the public to access healthcare information. The aim of this study is to comparatively assess the readability of LLM responses against traditional patient information leaflets (PILs).

Method

Traditional PILs were collected from the Circulation Foundation (CF) and Society for Vascular Surgery (SVS) for: abdominal aortic aneurysm, carotid artery disease and peripheral arterial disease. Subheadings were collected and rephrased into questions. Questions were posed to ChatGPT-4 and BARD chatbots to generate LLM PILs. An automated readability score (ARS) was calculated for traditional and LLM PILs. The ARS represents the mean of the following automated readability indices: Flesch-Kincaid, SMOG, FOG, Coleman-Liau, Linsear-Write, and the automated readability index. ARS were compared between PILs by two-way ANOVA.

Results

Two-way ANOVA showed no significant two-way interaction between document author and disease condition in PIL ARS ($F(6,60)=1.96$, $p=0.086$, $\eta^2g=0.16$). Disease condition had no effect on PIL ARS ($F(2,60)=0.45$, $p=0.64$, $\eta^2g=0.01$). PIL author had a significant main effect on ARS ($F(3,60)=3.7$, $p=0.016$, $\eta^2g=0.16$). Pairwise comparisons showed ChatGPT-4 had lower ARS than both CF ($p=0.022$) and SVS ($p=0.007$) PILs. BARD also had lower ARS than SVS PILs ($p=0.044$). With Bonferroni adjustment ChatGPT-4 had lower ARS than SVS PILs ($p=0.043$).

Conclusion

LLM derived patient information has lower average ARS than existing PILs and may be more easily readable. This has potential impact for the recommendation of these resources to patients experiencing vascular pathology.

Tailored risk assessment and forecasting in intermittent claudication using machine learning

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Background

Guidelines recommend cardiovascular risk reduction and supervised exercise therapy as the initial treatment for patients with intermittent claudication (IC). However, implementation challenges and poor patient compliance lead to significant variation in management and therefore outcomes. We propose a precise machine learning derived decision support system that aims to provide personalised outcome predictions across different initial management strategies.

Method

Feature selection was performed using the least absolute shrinkage and selection operator method. The model was developed using a bootstrapped sample of 10,000 patients based on 255 patients from our vascular centre. The model considered 27 baseline characteristics, compliance to best medical therapy/smoking cessation and initial treatment strategy. The model was validated using a separate dataset of 254 patients. This model was then used to build a prototype interactive decision support system which was evaluated using calibration curves, decision curve analyses and area under the receiver operator characteristic (AUROC) curves.

Results

The AUROC curves demonstrated excellent discrimination for the risk of progression to chronic limb threatening ischaemia at 2(0.892) and 5 years (0.866) and the likelihood of major adverse cardiovascular events (0.836), major adverse limb events(0.891) and revascularisation (0.896) within 5 years, regardless of the initial treatment strategy. Calibration curves demonstrated good consistency and decision curve analyses confirmed clinical utility. The decision support tool maintained an accuracy of >80% and an effect size of >0.5.

Conclusion

Our decision support system successfully predicts outcomes in patients with IC offering potential for improved risk stratification and patient outcomes.

Long term outcomes of hybrid revascularisation for complex peripheral arterial disease

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Background

This aim of this cohort study was to determine the peri-operative and long-term outcomes in patients undergoing hybrid revascularisation.

Method

A cohort study of patients from 2012 to 2019 who underwent hybrid revascularisation, with follow-up ending in 2023 was performed. The primary outcomes were freedom from target lesion revascularisation (TLR), major ipsilateral limb amputation (MLA) and mortality. Secondary outcomes were length of stay (LOS) and peri-operative morbidity including major adverse cardiovascular events (MACE).

Results

418 patients underwent hybrid revascularisation for Rutherford III(43.7%), IV(19.9%) and V-VI(36.4%) ischaemia and median follow-up was 84.1[IQR 81.1-89.8]months. All underwent femoral endarterectomy and endovascular treatment of their supra-inguinal (66.7%), infra-inguinal (26.3%) or multi-level (6.9%) vessels. The 5-year for freedom from TLR, MLA and mortality were 78.2%[74%-82.6%, 95%CI], 91.5%[88.7%-94.4%, 95%CI] and 63%[58%-68%, 95%CI], respectively. Peri-operative complication rates, including MACE (12.8% vs 3.8%, $p=0.001$), were observed at a significantly higher rate among CLTI compared to claudication patients. Compared to supra-inguinal lesion-treatment, freedom from TLR was worse in infra-inguinal lesion-treatment [HR 2.06(1.31-3.23, $p=0.002$)] and in multi-level lesion-treatment [HR 1.94(0.91-4.10, $p=0.084$)]. Cox regression analysis identified key variables predictive of worse TLR, MLA and mortality rates. Being female was associated with significantly better survival rates when presenting with claudication but significantly worse survival when presenting with CLTI.

Conclusion

This study represents the largest series of hybrid revascularisation with long term follow-up. The technique is an effective strategy that has with acceptable peri-operative morbidity, target lesion revascularisation, major amputation and survival.

Mechanical thrombectomy to treat acute deep venous thrombosis - the Lysis free era

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Background

Endovenous techniques are available in the management of patients with acute lower limb deep venous thrombosis (DVT). These include Catheter Directed Thrombolysis (CDT), pharmacomechanical thrombectomy, aspiration thrombectomy and mechanical thrombectomy (MT). CDT involves intensive nursing requirement; longer hospital stay and increased bleeding complications. We present a case series of patients treated with MT using the Inari Medical ClotTriever device over almost 3-year period from our tertiary vascular centre.

Method

A retrospective analysis was performed of a prospectively collated database of patients who underwent intervention for acute lower limb DVT using the ClotTriever device between April 2021 to January 2023 in our institution.

Results

A total of 65 patients have been treated with mechanical thrombectomy. The median age is 53(16-80); 36 were male. The IVC was involved in 14(22%) cases. The average time from initial date of symptoms to intervention was 13.5(3 -70) days. The median follow-up interval was 12(1-28) months. The average iliac venous stent rate was 71%. Primary patency was achieved in 85% of patients; 88% primary assisted patency; 94% secondary patency. No thrombolysis infusion was used in the primary treatment of these patients. There have been no device related complications.

Conclusion

In our centre, mechanical thrombectomy has been used successfully without the need for thrombolytic infusion in the management of acute lower limb deep venous thrombosis since April 2021. Mechanical thrombectomy has the advantage of requiring shorter length of stay in hospital, decreased nursing requirements, no need for repeated angiography and reduced bleeding complications.

Utility of hand grip strength in predicting mortality risk in chronic limb-threatening ischaemia

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Background

Sarcopenia is defined as low skeletal muscle strength, quantity and quality. Most studies of sarcopenia in chronic limb-threatening ischaemia (CLTI) only assess muscle quantity or quality on imaging. The aim of this study was to investigate the association of sarcopenia by hand grip strength with two-year mortality in people with CLTI.

Method

Single-centre prospective cohort study (NCT04027244). Patients undergoing a procedure for CLTI between May 2019 and May 2021 were eligible (minimum age: ≥ 65 initially; ≥ 50 from November 2019). Seated hand grip strength was measured using the Jamar+ digital hand dynamometer. Sarcopenia was defined as maximum grip strength (five repetitions bilaterally) $< 16\text{kg}$ in women and $< 27\text{kg}$ in men. Association of sarcopenia with two-year mortality was analysed using Cox regression and reported as hazard ratios (HR) with 95% confidence intervals (CI). The multivariable model included age, sex, frailty and Charlson comorbidity index (CCI).

Results

Ninety-seven participants were included. Twenty-five (26%) classified as having sarcopenia. Those with sarcopenia were a mean eight years older ($p < .001$). Sarcopenia was also associated with worse wound, ischaemia, foot infection clinical stage ($p = .004$), frailty ($p = .001$), and greater CCI score ($p = .011$).

At two-years, 25 people (26%) had died: 17 of whom had sarcopenia (68%) compared to only eight without (11%). Sarcopenia was independently associated with worse two-year mortality (HR 6.4; 95% CI 2.4, 17.2; $p < .001$).

Conclusion

Hand grip strength is highly predictive of worse two-year survival in people with CLTI. Grip strength may be a useful adjunct to risk stratification and aid shared decision making in CLTI.

Outcomes of open surgical, hybrid and endovascular management of lower limb acute limb ischaemia

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Guy's and St Thomas's Hospital, London

Background

Acute limb ischemia (ALI) is a medical emergency with significant morbidity and mortality. Rapid diagnosis is required because it is a time-sensitive condition. The aim of this study was to compare differences in outcomes of the different modalities used in the management of ALI.

Method

A single-centre retrospective cohort study was conducted on all patients who presented with lower limb ALI between 2014 and 2020. Demographic, clinical, and procedural characteristics were recorded, and differences between women vs men were assessed using independent t test and χ^2 test. The primary outcomes were major amputation and survival. Cox proportional hazards regression analyses were performed to identify independent predictors of poorer outcomes.

Results

A total of 322 ALI cases were actively managed with varying approaches: medical-only (86, 26.7%), open-only (125, 38.8%), hybrid (35, 10.9%) and endovascular-only (76, 23.6%). A further 30 cases were palliated. Male to female ratio was 1:1. There were no significant differences in amputation rates between treatment modalities when adjusted to ALI Rutherford classification at presentation. Independent predictors of poorer survival were age, Rutherford classification, chronic obstructive pulmonary disease and malignancy, but not treatment modality. Temporal analysis revealed a non-significant trend in improved amputation rates and a significant trend in improved survival rates.

Conclusion

Acute limb ischaemia remains a challenging condition to manage. Rutherford classification at presentation appears to be a strong predictor of outcomes irrespective of the management approach. Temporal improvements in outcomes may signify better decision-making in case selection and management approach.

Temporal changes and determinants of Quality of Life in patients with Chronic Limb Threatening Ischaemia

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Background

This study aimed to describe change in quality of life (QoL) over two-years, and its determinants, in people with chronic limb-threatening ischaemia (CLTI).

Method

Single centre prospective cohort study (NCT04027244). English-speaking CLTI patients presenting between May 2019 and March 2022 were eligible. QoL was assessed at baseline, one- and two-years using the Vascular Quality of Life Questionnaire (VascuQoL) (disease-specific) and EQ-5D-5L (generic health-related). Associations with overall survival were assessed using Cox-regression and reported as hazard ratios (HR) with 95% confidence intervals (CI). Minimal Clinical Important Difference (MCID) of QoL scores were determined using distribution-based approaches, analysed using ordered logistic regression, and reported as odds ratios (OR) with 95% CI.

Results

432 patients were included. 151 patients (35%) died at two-years. Worse baseline EQ-5D-5L score (per 0.1 score increase: HR 0.88; 95% CI 0.79, 0.98) as well as increasing age, frailty, and conservative/palliative management were independently associated with worse survival. Most patients (70%) reported a MCID improvement in the VascuQoL at two-years, but this was not seen in the EQ-5D-5L (16% had MCID improvement). Hybrid revascularisation (OR 3.28; 95% CI 1.04, 10.39) was independently associated with MCID improvement in VascuQoL. By EQ-5D-5L, frailty (OR 2.57; 95% CI 1.04, 6.38) and Wifl stage 3 (OR 3.33; 95% CI 1.09, 10.36) were independently associated with MCID improvement.

Conclusion

People with CLTI generally show improvement in disease-specific QoL over two-years but this is not replicated in generic health-related QoL. In those suitable, hybrid or open surgical revascularisation may offer better QoL benefits.

Covered Endovascular Reconstruction of Aortic Bifurcation (CERAB) learning curves at a tertiary referral centre

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Background

Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) is superior to kissing iliac stenting. However, the learning curve for CERAB is unknown.

Method

All CERAB procedures performed at a single UK tertiary vascular centre were identified. Demographic, radiation, and outcome data were collected retrospectively. TASCII classification was determined from pre-operative CT. Primary outcomes included major peri-operative complication, 30-day mortality and readmission, 60-day primary- and primary-assisted patency and operative radiation dose, dose Area Product (DAP). Learning curves were analysed by raw value and cumulative sum of deviance from mean (CUSUM).

Results

28 patients underwent CERAB between Sep 2020 and Oct 2023, 21 male, median age 62. TASCII categories were B (4), C (12) and D (12). Median length of stay was 4 days, and 4 patients were re-admitted within 30 days. Peri-operative mortality occurred in two cases, due to non-ischaemic diverticulitis and mesenteric ischaemia. 2 patients had arterial stenosis due to dissection flap or closure device failure. 93% maintained primary patency and 100% preserved primary assisted patency at 60 days. Over the series mean DAP down-trended with no significant difference in DAP between TASCII categories. CUSUM radiation learning curve showed a peak at case fifteen, after which dose trended down. There was no learning curve for peri-operative survival, 60-day primary patency, or major peri-operative complications.

Conclusion

Starting a CERAB program appears clinically safe, with no learning curve demonstrated for primary patency, major complication, or death. However, radiation dose did demonstrate a learning curve which may be related to procedural familiarity.

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POSTERS

POSTER 1

Biomarkers of brain injury in endovascular procedures: A scoping systematic review

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POSTER 2

Silent brain infarcts and neurocognitive injury after transcatheter aortic procedures: A systematic review

Stephen Crockett, Saud Khawaja, Lydia Hanna, Ghada Mikhail, Richard Gibbs

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POSTER 3

A modified Knickerbocker technique for the endovascular treatment of subacute Type B aortic dissection (TBAD)

James McCaslin, Rana Khalil, John Reicher, Ralph Jackson, Rob Williams, Dominic Pang

Freeman Hospital, Newcastle

POSTER 4

What vascular surgeons and Interventional radiologists can learn from a case of iatrogenic Type B aortic dissection following transradial coronary intervention in a patient with aberrant right subclavian artery (arteria lusoria): Case report and review of literature
Abdullah Thawabeh, Raimat Korede Salami

King's College Hospital, London

POSTER 5

Aortic dissection global epidemiology

Edward Antram^{1,2}, Barnaby Farquharson^{1,2}, James Budge^{1,2}, Bilal Azhar^{1,2}, Peter Holt^{1,2}, Alicja Rudnicka³, Christopher Owen³, Iain Roy^{1,2}

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POSTER 6

Identifying anatomical risk factors for the development of 'non-dissecting' acute aortic syndrome

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POSTERS

POSTER 7

Technical success and in-hospital mortality of patients after endovascular repair of ruptured abdominal aortic aneurysms: a retrospective study at a specific center in the decade 2012-2022

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POSTER 8

Type II endoleak embolization in a surveillance program for patient with EVAR during 2018-2022 in a specific centre

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POSTER 9

Endovascular procedures in vascular trauma cases from 2020 to 2022 in a specific centre

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POSTER 10

Navigating the challenges of saccular aortic arch aneurysms: A multidisciplinary approach

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Mid & South Essex Hospital Services NHS Foundation Trust, Basildon

POSTER 11

Mechanical thrombectomy for treating intermediate high- and high risk-pulmonary embolism: A retrospective cohort study to assess service requirements and potential benefits in the Southwest Scotland Vascular Network Part 1: Evaluating Natural Language Processing as a method of clinical data analysis

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POSTER 12

Audit on vascular closure devices (VCD) use and groin complications following endovascular interventions

Ahmed Youssif, Muhammad Zulfiquar, Ahmed Bayoumy, Haytham Hamid, Emma Scott

Sunderland Royal Hospital, Sunderland

POSTERS

POSTER 13

Single centre experience and outcomes of the Artivion E-Tegra stent graft

Yasser Ashoor, Vickna Balarajah, Luke Arwynck, Aishashaheen Hameed, Nora Alhazhari, Subramanian Nachiappan, Neelanjan Das, Akash Prashar, Carl Kotze, Sandeep Bahia
East Kent University Foundation Trust, Canterbury

POSTER 14

Outcomes of endovascular treatment of femoropopliteal segment occlusions

Alex Hardman, Hilary White

Somerset NHS Foundation Trust, Taunton

POSTER 15

Clinical value of routine duplex ultrasound scan after radio frequency ablation of truncal veins

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²Queen Medical Centre, Nottingham

POSTER 16

Mechanical thrombectomy of acute lower limb deep vein thrombosis: a single-centre case series

Ashwin Sivaharan, Tamer El-Sayed, Rana Khalil, John Reicher, Ralph Jackson, Sandip Nandhra

The Northern Vascular Centre, Freeman Hospital, Newcastle University, Newcastle

POSTER 17

The feasibility of lumbar magnetic resonance imaging to assess sarcopenia in chronic limb-threatening ischaemia

Kirsten Goves¹, Kelly Parke², Sarah Nduwayo¹, John Houghton^{1,2}, Gerry McCann^{1,2}, Rob Sayers^{1,2}

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POSTER 18

A systematic review and living meta-analysis of amputation risk in patients with Chronic Limb-Threatening Ischaemia based on their wound, ischaemia, and foot infection classification

Segun Lamidi^{1,2}, Max Jones¹, Coral Pepper², Rob Sayers^{1,2}, John Houghton^{1,2}

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POSTERS

POSTER 19

Evaluating cardiovascular risk management and outcomes in diabetics undergoing intervention for chronic limb-threatening ischaemia

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POSTER 20

Patients with chronic limb threatening ischaemia (CLTI) have significant risk of major adverse cardiovascular events (MACE) and mortality. Adjunctive pharmacotherapy is key to reducing risk. We evaluated lipid lowering therapy use (LLT) in patients undergoing intervention for CLTI

Than Dar¹, Penelope PJ Sucharitkul², Nawaz Z Safdar¹, Bethany Bracewell³, Mehak Sood³, Kinshuk Jain³, Patrick A Coughlin¹, Marc A Bailey^{1,3}

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The GORE® VIABAHN® Device family† of covered stent grafts gives you the flexibility and conformability to safely address even complex cases.^{1,2}

See the data at goremedical.com/eu/viabahn/device-family




* As used by Gore, PROPATEN Bioactive Surface refers to Gore's proprietary CBAS® Heparin Surface.

† The GORE® VIABAHN® VBX Balloon Expandable Endoprosthesis indication includes de novo or restenotic lesions in iliac arteries, including those at the aortic bifurcation. The GORE® VIABAHN® Endoprosthesis with PROPATEN Bioactive Surface indication includes lesions in the iliac arteries only.

1. Piazza M, Squizzato F, Dall'Antonia A, et al. Outcomes of self expanding PTFE covered stent versus bare metal stent for chronic iliac artery occlusion in matched cohorts using propensity score modelling. *European Journal of Vascular & Endovascular Surgery*. 2017;54(2):177-185.
2. Panneton JM, Bismuth J, Gray BH, Holden A. Three-year follow-up of patients with iliac occlusive disease treated with the Viabahn Balloon-Expandable Endoprosthesis. *Journal of Endovascular Therapy*. 2020;27(5):1.

 Consult Instructions
for Use
eifu.goremedical.com

Refer to *Instructions for Use* at eifu.goremedical.com for a complete description of all applicable indications, warnings, precautions and contraindications for the markets where this product is available. 
Products listed may not be available in all markets.

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Abbott

At Abbott, we're dedicated to helping people live more fully, in everything we do. We're creating the future of healthcare through life-changing technologies and products that make you healthier and stronger, quickly identify when you have a medical need, and treat conditions to help you get back to doing what you love. With headquarters in north suburban Chicago, we serve people in more than 160 countries with leading medical devices, diagnostics, nutrition products and branded generic medicines. Our 114,000 colleagues are helping millions of people to live better and healthier, every day around the world. Connect with us at www.cardiovascular.abbott/int, on LinkedIn at www.linkedin.com/company/abbott-/, on Facebook at www.facebook.com/Abbott and on Twitter [@AbbottCardio](https://twitter.com/AbbottCardio) or [@AbbottNews](https://twitter.com/AbbottNews) or [@AbbottGlobal](https://twitter.com/AbbottGlobal).

Angiodroid

Angiodroid Spa specializes in innovative medical devices, notably Angiodroid The CO2 Injector. This groundbreaking technology facilitates precise and efficient CO2 angiography procedures, enhancing patient safety and clinical outcomes. Committed to advancing healthcare, Angiodroid continues to pioneer cutting-edge solutions in the field of endovascular surgery.

BD

BD is one of the largest global medical technology companies in the world and is advancing the world of health by improving medical discovery, diagnostics and the delivery of care. BD helps customers enhance outcomes, lower costs, increase efficiencies, improve safety and expand access to health care. **bd.com**

Bentley

Bentley's passion is the development, manufacturing and distribution of innovative implants for minimal-invasive treatments of vascular diseases. Since market launch in 2012 we rapidly expanded worldwide. Thanks to our international network of exclusive distribution partners we are represented in more than 80 countries – in some we are already market leader.

Boston Scientific

Boston Scientific is dedicated to transforming lives through innovative medical solutions that improve the health of patients around the world. Our commitment to transforming lives through meaningful innovation is more than a goal. It's how we're advancing science for life. We're pairing investments in clinical research and medical education with an unrivalled portfolio of vascular therapies, helping to deliver differentiated solutions and meet the needs of more patients worldwide.

OUR SPONSORS

Cordis

Cordis is a worldwide leader in the development and manufacture of interventional vascular technology, with a reputation for clinical acumen, training and services. For more than 60-years, Cordis has delivered revolutionary products to treat millions of patients. With an established legacy of innovation in high-quality and less-invasive cardiovascular products, Cordis has built a strong global footprint with operations in countries around the world. Our focus is on cardiology and endovascular platforms, with high-quality products such as diagnostic and interventional catheters, balloons, self-expanding stents, guide wires, and vascular closure devices.

Medtronic

Here at Medtronic we reimagine the treatment of over 70 of the world's most complex and challenging conditions. Not for the one, but for the many. Not someday, but this day. By bringing together data, artificial intelligence, and our deep knowledge of the human body, we create something even more extraordinary. In strengthening, lengthening, and saving lives, we restore hope and possibility. There is no greater measure of our efforts than the outcomes we enable, for everyone we serve. From better clinical and economic outcomes to societal ones, it motivates us to introduce technologies to underserved regions, dismantle barriers to equity in our communities, and deeply understand the patients and health systems we serve. Six powerful words have inspired us to do the extraordinary for 60 years and counting: Alleviate pain. Restore health. Extend life.

Penumbra

Penumbra, Inc., headquartered in Alameda, California, a global healthcare company focused on innovative therapies. Penumbra designs, develops, manufactures and markets novel products and has a broad portfolio that addresses challenging medical conditions in markets with significant unmet need. Penumbra supports healthcare providers, hospitals and clinics in more than 100 countries.

Shockwave Medical

Shockwave Medical is a company focused on developing and commercializing products intended to transform the way calcified cardiovascular disease is treated. We aim to establish a new standard of care for medical device treatment of atherosclerotic cardiovascular disease through our differentiated and proprietary local delivery of sonic pressure waves for the treatment of calcified plaque, which we refer to as 'Intravascular Lithotripsy.' For more information, visit www.shockwavemedical.com.

Terumo Aortic

At Terumo Aortic, we partner with our customers to revolutionise aortic care. We deliver innovation, versatility and precision with the broadest range of solutions that can be personalised for every patient. We are further complementing our implantable device portfolio through the development of digital technologies.

OUR SPONSORS

VP Med

VP Med is a leading UK-based MedTech company dedicated to supplying and accelerating the adoption of innovative, patient-focused medical technologies. Our passion for delivering education and product support drives collaboration with key opinion leaders to communicate new ideas and innovations. We design highly informative, educational programmes to empower healthcare professionals.

WL Gore & Associates

W. L. Gore & Associates is a global materials science company dedicated to transforming industries and improving lives. Since 1958, Gore has solved complex technical challenges in demanding environments — from outer space to the world's highest peaks to the inner workings of the human body. With more than 11,000 Associates and a strong, team-oriented culture, Gore generates annual revenues of \$3.8 billion.

For more information, visit [gore.com](https://www.gore.com).

Gore engineers medical devices that treat a range of cardiovascular and other health conditions. With more than 50 million medical devices implanted over the course of more than 45 years, Gore builds on its legacy of improving patient outcomes through research, education and quality initiatives. Product performance, ease of use and quality of service provide sustainable cost savings for physicians, hospitals and insurers. Gore is joined in service with clinicians and through this collaboration we are improving lives.

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BSET

British Society of
Endovascular Therapy

BSET Annual Meeting 2025
Thursday 26th – Friday 27th June
(National Vascular Training Day
Wednesday 25th June)

at

Tortworth Court Hotel, Wotton-under-Edge,
South Gloucestershire

BSET Endovascular Training Course 2025
Thursday 13th – Friday 14th March

at

Tortworth Court Hotel, Wotton-under-Edge,
South Gloucestershire

***10 CPD points have been awarded for this meeting
by the Royal College of Surgeons of Edinburgh
(RCSEd02972)***

Medtronic

Proven procedure Lower profile

Proven in millions of patients,¹ the ClosureFast™ RFA System is now available in 6F for better flexibility and easier navigation, even in tortuous veins.^{1‡}

Now available in

6F

Designed for[‡]:



Enhanced
flexibility



Improved
navigation



Increased
kink-resistance

ClosureFast™
Radiofrequency Ablation System

Adverse events may include hematoma, phlebitis, skin injury, nerve injury, thrombophlebitis, thrombosis, and/or pulmonary embolism.

¹Compared to ClosureFast™ 7F catheter and VenClose™ catheter in bench testing.

[‡]Bench test data on file at Medtronic. N = 15 catheters each. Bench tests may not be indicative of clinical performance.

References:

1. ClosureFast™ Procedures. Medtronic data on file, 2022.

ClosureFast™ RFA System includes ClosureFast™ catheter and ClosureRFG™ generator.

See the device manual for detailed information regarding the instructions for use, indications, contraindications, warnings, precautions, and potential adverse events. For further information, contact your local Medtronic representative and/or consult the Medtronic website at medtronic.eu.

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