Royal Cornwall Hospitals
NHS Trust

Cervical Artery Dissection in the Emergency Department Clinical Guideline

V1.0

October 2025

1. Aim/Purpose of this Guideline

1.1. The aim of this document is to guide clinicians on the management of cervical artery dissection to prevent ischaemic stroke in patients in Cornwall presenting to the Emergency Department at Royal Cornwall Hospital Trust.

1.2. This guideline is limited in scope to spontaneous cervical artery dissection or those where there is minimal trauma.

1.3. Patients who have sustained Major trauma should be managed on a case by case basis with discussion between the relevant teams regarding risk v benefits of any treatments suggested here and therefore, this guideline is **Not** intended for major trauma patient use.

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team.

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2. The Guidance

2.1. Background

2.1.1. Cervical artery dissection is an uncommon pre-disposing event in the general population (but is a leading cause of ischaemic stroke in the young) [1,2]

2.1.2. In this context “Cervical Artery” is defined as either/both The common carotid arteries, the internal carotids and vertebral arteries.

2.1.3. It is classified broadly into Extra-cranial Arterial Dissection (EAD) and Intra-cranial Arterial Dissection (IAD).

2.1.4. The mechanism for this disease process is largely uncertain (most patient have no underlying aetiology) but may present after minor trauma [3].

2.2. Presentation

2.2.1. Pain is a common presentation with neck, face, orbital, frontal or temporal headache present in Internal Carotid dissection. Cerebral/retinal ischaemia may be present with Anterior Cerebral Artery and Middle Cerebral Artery territories most affected. Of note; neck pain is **Absent** in 80% of these patients.

2.2.2. Partial Horner's syndrome in around 40% of patients, cranial nerve palsies may be present in around 10% of patient [(3)].

2.2.3. Vertebral artery dissections also present with headache, it tends to be more occipital and may be associated with posterior neck pain which may be unilateral [(4)].

2.2.4. Ischaemic features presenting with posterior circulation type symptoms (vertigo, nystagmus, ataxia etc) but occur on average two weeks after the onset of pain unless the disruption occurs very acutely.

2.2.5. Horner's syndrome is **much less common** than with Internal Carotid dissection [(3)].

2.3. Imaging

2.3.1. If EAD/IAD is suspected, then first line imaging is a CT angiogram (locally Maxims Code "Acute Stroke **Thrombectomy only, Computerised Tomography (CT) and Computerised Tomography Angiogram (CTA)"**. This would include CT brain and CT angiogram from aortic arch to vertex.

2.3.2. This has excellent performance with sensitivity and specificity of around 98% [(5)].

2.3.3. If acute ischaemic stroke is suspected, then follow up would be recommended with Magnetic Resonance Imaging +/- Magnetic Resonance Angiogram with the inpatient team as CT can be poor at picking up acute ischaemia, especially in the posterior fossa.

2.4. Management

2.4.1. Initial concern is management of the neurological ischaemic sequalae. Principles are generally those of acute stroke so the stroke team should be activated.

2.4.2. Dissection is not a contraindication to thrombolysis unless [(6)]:

- The dissection starts **or extends** beyond the Dura (i.e. EAD is amenable, IAD is not). The risk of sub-arachnoid hemorrhage is much higher in this population.
- There is frank rupture of the cervical vessel.
- There is intercurrent Intra-cranial hemorrhage (e.g. Sub-Arachnoid Hemorrhage).

- There are other contra-indications to thrombolysis as would normally be observed.

2.4.3. EAD, should it be identified should be referred for mechanical thrombectomy via refer-a-patient. This may prevent clot propagation and endovascular repair may be amenable even if thrombolysis is contra-indicated.

2.4.4. Antithrombotic therapy after identification is important. Some form of anti-thrombotic treatment reduces stroke risk from 30% to c. 3% [(5)]. The choice of anti-coagulation/anti-platelet agent is based upon different factors [(7)]

- If the dissection is contained as an EAD (including if there is a total occlusion of the artery), then formal anti-coagulation should be initiated either with a Novel Anticoagulants, Warfarin or Low Molecular Weight Heparin.

- If the dissection is an IAD or an EAD with extension beyond the Dura then single agent anti-platelet therapy should be initiated. IAD/EAD with intra-cranial extension has a much higher risk of bleeding and occult sub-arachnoid extension.

- Ongoing antithrombotic treatment decisions (anticoagulation versus antiplatelet treatment) can be made by the Stroke/Eldercare Physician, considering bleeding risk (e.g. large infarct size, hemorrhagic transformation, intradural extension of dissection) and high-risk radiological factors (e.g. intraluminal thrombus, occlusive dissection).

2.4.5. There is insufficient evidence to provide recommendation regarding surgical/endovascular repair for patients with IAD aneurysms, (both Pseudo and incidental) and Isolated headache alone without any neurological deficits. There is a lack of longitudinal data on the risk balance for these patients (8). They should be referred as per 2.4.3. for expert opinion.

2.4.6. All patient presenting out of hours should be discussed with the on-call Emergency Physician as a matter of urgency. Thrombectomy referrals should still be made out of hours, the referral key pasted into the “Medical Plan” section of Nerve centre and posted into the Oceano discharge letter notes as well. The On-Call Medical Registrar should be informed of all cases. This may be done by the stroke nurse when one is on duty.

2.5. References

1. Putaala J, Metso AJ, Metso TM, et al. Analysis of 1008 consecutive patients aged 15 to 49 with first-ever ischemic stroke: the Helsinki young stroke registry. Stroke 2009;40:1195-1203.

2. Robertson JJ, Koyfman A. Extracranial Cervical Artery Dissections. Emerg Med Clin North Am. 2017 Nov;35(4):727-741. doi: 10.1016/j.emc.2017.06.006. Epub 2017 Aug 23. PMID: 28987426.

3. Clark M, Unnam S, Ghosh S. A review of carotid and vertebral artery dissection. Br J Hosp Med (Lond). 2022 Apr 2;83(4):1-11. doi: 10.12968/hmed.2021.0421. Epub 2022 Apr 23. PMID: 35506728.

4. Wijdicks E.F.M., Findlay, J. Y., Freeman, W. D., Sen A. (2019). Mayo Clinic critical and Neurocritical Care Board Review. Oxford University Press.

5. Cadena R. Blunt cerebrovascular injuries: early recognition and stroke prevention in the emergency department. Emerg Med Pract. 2020 Dec 15;22(Suppl 12):1-43. PMID: 33320488.

6. Debette S, Mazighi M, Bijlenga P, Pezzini A, Koga M, Bersano A, Kõrv J, Haemmerli J, Canavero I, Tekiela P, Miwa K, J Seiffge D, Schilling S, Lal A, Arnold M, Markus HS, Engelter ST, Majersik JJ. ESO guideline for the management of extracranial and intracranial artery dissection. Eur Stroke J. 2021 Sep;6(3):XXXIX-LXXXVIII. doi: 10.1177/23969873211046475. Epub 2021 Oct 13. Erratum in: Eur Stroke J. 2023 Mar;8(1):399. doi: 10.1177/23969873221133905. PMID: 34746432; PMCID: PMC8564160.

7. Shadi Yaghi, Liqi Shu, Lauren Fletcher, Fayez H. Fayad, Asghar Shah, Ana Herning, Noail Isho, Perla Mansour, Kareem Joudi, Bashar Zaidat, Noor A. Mahmoud, Feras Abdul Khalek, Han Xiao, Eric Goldstein, Malik Ghannam, James E. Siegler, Setareh Salehi Omran, Ekaterina Bakradze, Thanh N. Nguyen, Zafer Keser, Muhib Khan, Reza Bavarsad Shahripour, Adam de Havenon, Nils Henninger, Mirjam R. Heldner, Thalia S. Field, Yasmin Aziz,, Eva A. Mistry, Karen Furie, Stefan Engelter, Hugh S. Markus, Anticoagulation Versus Antiplatelets in Spontaneous Cervical Artery Dissection: A Systematic Review and Meta-Analysis, Stroke, 55, 7, (1776-1786), (2024).

8. Serkin Z, Le S, Sila C. Treatment of Extracranial Arterial Dissection: the Roles of Antiplatelet Agents, Anticoagulants, and Stenting. Curr Treat Options Neurol. 2019 Sep 26;21(10):48. doi: 10.1007/s11940-019-0589-7. PMID: 31559486.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Whole document.
Lead	Dr S G Godfrey- Emergency Medicine Consultant.
Tool	Reviewed Via Word.
Frequency	6 monthly or as issues arise.
Reporting arrangements	Reviewed by ED SMT and Stroke improvement project.
Acting on recommendations and Lead(s)	Dr S G Godfrey (ED Consultant). Dr M Madulla (Stroke).

Information Category	Detail of process and methodology for monitoring compliance
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 4 weeks. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the Equality Diversity And Inclusion Policy or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Cervical Artery Dissection in the Emergency Department Clinical Guideline V1.0
This document replaces (exact title of previous version):	New Document.
Date Issued/Approved:	December 2024
Date Valid From:	October 2025
Date Valid To:	October 2028
Directorate / Department responsible (author/owner):	Dr S G Godfrey, Consultant Emergency Physician.
Contact details:	Steven.godfrey@nhs.net 01872 253219
Brief summary of contents:	Emergency management of cervical artery dissection within the Emergency department.
Suggested Keywords:	“Dissection” “Artery”
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	• ED SMT. • Stroke improvement project. • Emergency Department Governance. • Care group Governance.
Manager confirming approval processes:	Rachael Pearce
Name of Governance Lead confirming consultation and ratification:	Mr Paul Evangelista.
Links to key external standards:	None required.
Related Documents:	None required.
Training Need Identified?	No.

Information Category	Detailed Information
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet.
Document Library Folder/Sub Folder:	Clinical / Emergency Department.

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
December 2024	V1.0	Initial issue	Dr S Godfrey, Consultant in Emergency Medicine

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Cervical Artery Dissection in the Emergency Department Clinical Guideline V1.0
Directorate and service area:	Emergency Department/Acute Emergency Medicine
Is this a new or existing Policy?	New
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Dr Steven Godfrey, Consultant in Emergency Medicine
Contact details:	01872 253219

Information Category	Detailed Information
1. **Policy Aim - Who is the Policy aimed at?** (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	The aim of this document is to guide clinicians on the management of cervical artery dissection to prevent ischaemic stroke in patients in Cornwall presenting to the Emergency Department at Royal Cornwall Hospital Trust.
2. **Policy Objectives**	To standardize the care provided to this patient cohort in the emergency department.
3. **Policy Intended Outcomes**	To provide guidance for the management of patients presenting to the Emergency Department with this rare condition.
4. **How will you measure each outcome?**	Monitoring of mortality, incidents and complaints related to the care and treatment provided to this patient cohort.
5. **Who is intended to benefit from the policy?**	This patient cohort and the clinicians by giving definitive clinical management guidance.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** Emergency Medicine Governance. Acute, Emergency Medicine Care Group Governance.
6c. What was the outcome of the consultation?	Agreed.
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No.

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	
Religion or belief	No	
Marriage and civil partnership	No	

Protected Characteristic	(Yes or No)	Rationale
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Dr Steven Godfrey, Consultant in Emergency Medicine.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis