Royal Cornwall Hospitals
NHS Trust

Management of a ruptured Abdominal Aortic Aneurysm (AAA) Clinical Guideline

V1.0

March 2025

Summary

This document is designed to provide a framework for clinicians for the management of patients with ruptured abdominal aortic aneurysm.

1. Aim/Purpose of this Guideline

1.1. To guide clinicians in the management of patients with ruptured abdominal aortic aneurysm.

1.2. This version supersedes any previous versions of this document.

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

Acronym	Description
AAA	Abdominal aortic aneurysm
BP	Blood pressure
CEPOD	Confidential enquiry perioperative death (emergency theatre)
CT	Computerised tomogram
CTA	Computerised tomography angiogram
ECG	Electrocardiograph
EVAR	Endovascular aneurism repair
EFA	Emergency Floor Anaesthetist

GA	General anaesthetic
LA	Local anaesthetic
Th7	Theatre 7
Th14	Theatre 14
Acronym	**Description**

2.1. Ruptured AAA

The typical presentation of a ruptured AAA is a patient of over 60 years of age with a history of collapse associated with back, flank or abdominal pain and arriving with haemodynamic compromise. An ‘expansile mass’ representing the aneurysm may or may not be palpable.

2.2. Symptomatic AAA

There is a large cohort of patients in Cornwall with a known AAA due to our mature Screening Programme. These patients may present with abdominal symptoms but no collapse or haemodynamic compromise. Such a patient is considered to have a symptomatic AAA and will require less urgent attention. The final judgement should be made by the Vascular Consultant on call.

2.3. Referral Pathway

All patients accepted from the community with a suspected ruptured AAA should be directed to resuscitation room in the A&E department. Patients who are already in the Royal Cornwall Hospital should remain in their current location when the suspicion of a ruptured AAA is raised. They must be promptly treated and monitored by the parent team until seen by the Vascular team.

2.4. Vascular Surgical Input

2.4.1. All suspected cases of ruptured AAA must be referred immediately to the Vascular Consultant on call.

2.4.2. This can be done via switchboard (“Can you page the Vascular Consultant on call please”) The Vascular Consultant on call will attend the patient where possible or delegate to the General Surgical Registrar on call or a Vascular Consultant colleague.

2.5. Initial Management prior to Vascular Assessment

2.5.1. All patients with suspected ruptured AAA should receive the following initial treatment prior to assessment by the Vascular team:

- High-flow oxygen.
- Large bore IV access but no fluid resuscitation (see notes on permissive hypotension).

- Monitoring with pulse oximeter, ECG and non – invasive BP every 5 minutes.

- Urgent blood sent off for FBC, U&E's, Coagulation, group & save with 6 units cross matched (team to contact blood transfusion and alert to potential of rAAA).

2.6. Vascular assessment

2.6.1. The Vascular team will assess the patient and take appropriate action:

- Clinical diagnosis of ruptured AAA in a haemodynamically compromised patient: Urgent review by on call Vascular Surgeon who will make a decision regarding imaging (CTA), immediate transfer to theatre or palliative care.

- Suspected ruptured AAA but AAA not known and not palpable: Arrange immediate CT scan via on call Consultant Radiologist depending on degree of haemodynamic compromise.

- Suspected catastrophic event but possible alternative diagnosis: Arrange immediate CT scan via on call Consultant Radiologist.

- Symptomatic AAA or other condition which is not immediately threatening: Arrange CT scan at an appropriate time via on call Consultant Interventional Radiologist.

2.7. Initial Vascular Management

2.7.1. The Vascular team will take the following action as soon as a ruptured AAA is considered likely or is already confirmed:

- Ask the theatre manager to setup for a ruptured AAA in the emergency theatre.

- Inform the on-call Consultant Anaesthetist, EFA or CEPOD Anaesthetist if not involved already.

- Consider endovascular aneurysm repair (EVAR) or open surgical repair for people with a ruptured infrarenal abdominal aortic aneurysm (AAA).

2.7.2. Be aware that:

- EVAR provides more benefit than open surgical repair for most people, especially men over 70 and women of any age.

- open surgical repair is likely to provide a better balance of benefits and harms in men under 70.

2.8. **Transfer to CT scanner**

2.8.1. A patient who is being transferred to the CT scanner requires:

- Continue monitoring with pulse oximeter, ECG and non-invasive BP every 5 minutes.
- Patient needs to be accompanied by at least one Nurse and Doctor at all times.
- Resuscitation equipment available en route.
- Vascular Consultant will discuss the type of imaging with Radiology Consultant on call. The norm is a CT scan of abdomen and pelvis with IV contrast.

2.9. **Transfer to Theatre or IR**

2.9.1. A patient with confirmed ruptured AAA who is being transferred to theatre requires:

- Continuous monitoring with pulse oximeter, ECG and non-invasive BP every 5 minutes.
- Patient needs to always be accompanied by at least one nurse and doctor.
- Resuscitation equipment available en route.
- Vascular Consultant informs the Team Leader in the emergency theatre of expected time of arrival.

2.10. **Set up in theatre**

2.10.1. The setup in theatre relies on prompt and clear concise communication:

- The default theatre location is Th7 for open AAA and T14 for EVAR. The Theatre Team Leader will arrange an alternative theatre if not available.
- The patient should go straight into theatre bypassing the anaesthetic room.
- Vascular Consultant, Anaesthetic Consultant and Theatre Team Leader will each arrange appropriate staff to come to theatre.
- Theatre set up includes major vascular tray, aortic clamps, large Foley catheter for balloon occlusion of the aorta, table mounted retractor system, Cell salvage and two functioning suction machines.
- On arrival in theatre the patient may need additional IV access and a urinary catheter.
- A WHO check should take place.
- Induction of anaesthesia will start once the patient is fully prepped/drape. Both Scrub Nurse and Surgeon must confirm they are ready to go.

- EVAR can be performed under GA or under local anaesthetic infiltration if a percutaneous approach is possible. Additional analgesia may be necessary for leg ischaemia pain if a local approach is adopted.

2.11. **Notes on permissive hypotension**

- Preoperative resuscitation of ruptured AAA patients with hypotension must be judicious.
- Aggressive volume resuscitation before aortic control is a predictor of increased postoperative mortality by overcoming the tamponade that stabilized the initial rupture. This can also cause haemodilution, coagulopathy, hypothermia, and acidosis, and further deterioration.
- Fluid resuscitation is minimized to maintain consciousness, to prevent ST depression, and usually to maintain a systolic pressures of 70 to 80mmHg.

Reference:

Wanhainen A, Verzini F, Van Herzeele I, Allaire E, Bown M, Cohnert T, et al. Editor's choice – european society for vascular surgery (Esvs) 2019 clinical practice guidelines on the management of abdominal aorto-iliac artery aneurysms. European Journal of Vascular and Endovascular Surgery. 2019 Jan;57(1):8–93.

https://www.nice.org.uk/guidance/ng156/chapter/Recommendations#repairing-ruptured-aneurysms

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	All elements of this policy will be monitored via the various reports available within the regular Vascular and theatres modules in RADAR.
Lead	Dr David Elliott, Consultant Anaesthetist.
Tool	Various reports are available to monitor the effectiveness and implementation of the policy.
Frequency	Yearly NVR reviews by Anaesthesia/IR and Vascular surgery.
Reporting arrangements	Anaesthetists' via group email and governance meeting both ACCT and Vascular. Who or what committees will the completed report be sent to. How will each report be interrogated to identify the required actions and how thoroughly should this be documented in e.g. meeting minutes.

Information Category	Detail of process and methodology for monitoring compliance
	The lead or committee is expected to read and interrogate the report to identify deficiencies in the system and act upon them. Consider stating this responsibility in committee terms of reference.
Acting on recommendations and Lead(s)	Which committee, department or lead will undertake subsequent recommendations and action planning for any or all deficiencies and recommendations within reasonable timeframes? Required actions will be identified and completed in a specified timeframe. Consider stating this responsibility in committee terms of reference.
Change in practice and lessons to be shared	How will system or practice changes be implemented the lessons learned, and how will these be shared. Possible wording to use for this column. Required changes to practice will be identified and actioned within (state a specific time frame). 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:	Management of a ruptured Abdominal Aortic Aneurysm (AAA) Clinical Guideline V1.0
This document replaces (exact title of previous version):	New Document
Date Issued/Approved:	March 2025
Date Valid From:	March 2025
Date Valid To:	March 2028
Directorate/Department responsible (author/owner):	Dr David Elliott, Consultant Anaesthetist
Contact details:	01872 25 8197
Brief summary of contents:	To provide safe and efficient management of a ruptured Abdominal Aortic Aneurysm (AAA)
Suggested Keywords:	Ruptured abdominal aortic aneurism, aneurysm, AAA. EVAR. CEPOD, Vascular.
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Care Group governance, Care group Board
Manager confirming approval processes:	Doug Riley
Name of Governance Lead confirming consultation and ratification:	James Masters
Links to key external standards:	See below
Related Documents:	Wanhainen A, Verzini F, Van Herzeele I, Allaire E, Bown M, Cohnert T, et al. Editor's choice – european society for vascular surgery (Esvs) 2019 clinical practice guidelines on the management of abdominal aorto-iliac artery aneurysms. European

Information Category	Detailed Information
	Journal of Vascular and Endovascular Surgery. 2019 Jan;57(1):8–93. https://www.nice.org.uk/guidance/ng156/chapter/Recommendations#repairing-ruptured-aneurysms
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Anaesthetics

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
26/11/2024	V1.0	Initial issue	Dr David Elliott, Consultant Anaesthetist

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:	Management of a ruptured Abdominal Aortic Aneurysm (AAA) Clinical Guideline V1.0
Directorate and service area:	Anaesthetics, Critical Care and Theatres, Vascular teams
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 David Elliott, Consultant Anaesthetist
Contact details:	01872 25 8197

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)	Vascular surgical team, Anaesthetic team and Theatres Team and Interventional Radiology.
2. **Policy Objectives**	To provide safe and efficient management of a ruptured Abdominal Aortic Aneurysm (AAA).
3. **Policy Intended Outcomes**	To guide the safe and appropriate management of a ruptured Abdominal Aortic Aneurysm (AAA).
4. **How will you measure each outcome?**	Monitoring through audit, department feedback and discussion at governance meetings (Vascular/Anaesthetic/Theatres).
5. **Who is intended to benefit from the policy?**	Patients.

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:** Anaesthetists and Vascular teams via group email and meetings.
6c. What was the outcome of the consultation?	Policy approved.
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 David Elliott, Consultant Anaesthetist

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