When Should Ruptured AAA be Transferred: Tips And Tricks For Doing It Safely and Effectively

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When should a rupture AAA be transferred?

- Patients suitable for repair
- Repair cannot be offered locally

Objectives:

- To determine the proportion of patients with ruptured AAA (rAAA) who are transferred prior to treatment
- Compare outcomes for patients transferred for treatment of rAAA with those treated without transfer as an intention-to-treat analysis

Observations

- 19% of cohort was transferred for care
- Increased use of transfers with each subsequent year (14% in 2005 to 22% in 2010, p<0.001)
- 16% of those transferred died without receiving treatment

Benefit and Risk of Transfer

<table>
<thead>
<tr>
<th>Benefit and Risk of Transfer</th>
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<tbody>
<tr>
<td>OPERATIVE Mortality*</td>
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<tr>
<td>Inter-facility Transfer</td>
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<td>0.81</td>
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*Adjusted for age, sex, race, insurance, comorbidity, state, year, and hospital characteristics

I have no disclosures
Western Vascular Society Transfer Guidelines for Ruptured Abdominal Aortic Aneurysms

- Survey results from the membership
- Literature Review
- Existing guidelines from Europe
- Practices collected from other US centers of excellence
- 15 Specific Best-Practice Guidelines
- Endorsed by membership September 2015

Addressing key components of successful transfer programs

I. Organized inter-facility system of care

1. Physician-to-physician discussion should take place quickly to expedite the transfer process and assure the hand-off of all appropriate information and data.
2. Transfer agreements with the local ambulance service should be in place.
3. CT scan should be performed as long as it does not create undue delay in transfer. Once transfer is approved it is preferable for images to be sent electronically to assist in rapid operative planning. If electronic transfer is not possible, a CD or DVD of DICOM files must accompany the patient.
4. Other lab work or x-rays should only be performed to confirm the diagnosis of rAAA prior to transfer.
5. Transfer should be performed by means that will allow for the shortest time from diagnosis to treatment, based on distance, weather and traffic patterns.
6. Suitably trained personnel should execute the transfer, and should be capable of managing CPR, intubation, fluids, and inotropic blood pressure support.

II. Defined clinical criteria for transfer

1. A clinical diagnosis of ruptured abdominal aortic aneurysm (rAAA) should be considered in patients over the age of 50 years presenting with abdominal/back pain AND hypotension or with a known AAA and symptoms of either abdominal or back pain, hypotension or impending cardiovascular collapse.
2. In patients where an alternative diagnosis is considered more likely on clinical grounds, rAAA should be excluded with radiological confirmation, using ultrasound or CT scan when appropriate.
3. All patients with a clinical or radiological diagnosis of rAAA should be assessed as to their current clinical condition to determine suitability for transfer:
   a. Patients with prior good functional status without cardiac arrest or severe co-morbidity should be transferred without delay.
   b. Transfer after cardiac arrest may be contraindicated.
   c. Case-by-case decision for severe medical comorbidity, advanced age, or those who require significant hemodynamic support.
4. Patients who have been previously turned down for elective surgery should still be considered for transfer and treatment.

III. Standard resuscitation protocols for the transport

- Blood pressure goals
- Fluid management / blood transfusion

1. Permissive hypotension is advocated for patients with a clinical diagnosis of rAAA to maintain a mental status and systolic blood pressure 70-90 mm Hg.
2. In-transit care should include:
   a. Establishment of two large bore peripheral intravenous access and frequent or continuous vital sign monitoring.
   b. Aggressive fluid resuscitation should be avoided.
   c. Blood products during transfer are not required and may delay transfer.
Addressing components of successful transfer programs

IV. Appropriate resources at the receiving hospital

1. Receiving hospitals should provide a simple and reliable method of referral
2. Formal protocols for treatment of rAAA should be in place for care of transferred patients to expedite care
3. If vascular services with EVAR capabilities cannot be provided on-site (including EVAR under local anesthesia), the patient should be considered for transfer to a hospital with appropriate facilities and expertise.

Further Study

- Socialization of guidelines
- Diffusion of guidelines and impact on outcomes
  - Transfer rates
  - Death without repair
  - Operative mortality
- Operational barriers to the transfer process

Thank you