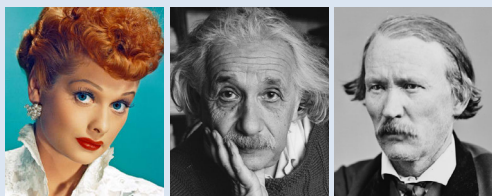


The VEU™

The Vascular & Endovascular Update

Summer 2020

Three patients, three AAAs, three different treatment options.



You wouldn't think beloved, daffy comedian Lucille Ball, theoretical physicist and Nobel Prize winner Albert Einstein, and rough and tumble American frontiersman Kit Carson would have much in common. These three icons lived very different lives, and yet one common thread unites them: they all died of abdominal aortic aneurysm (AAA) ruptures.

Carson died at the age of 58 in 1868, with his last words bidding Dr. Tilton and Thomas Boggs, "Goodbye, friends. *Adios, compadres.*" Einstein refused surgery for his ruptured and leaking AAA, saying, "I have done my share; it is time to go. I will do it elegantly". He died at the age of 76 in 1955. Ball was 77 when she experienced severe back pains, lost consciousness, and died suddenly in 1989.

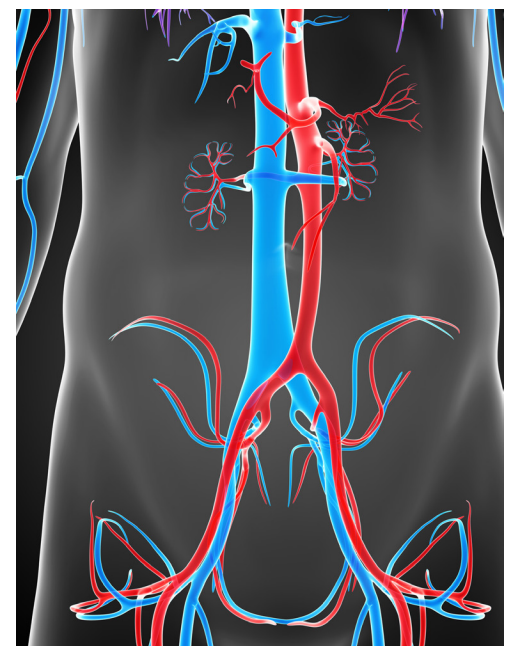
Which association awarded Lucille Ball "Woman of the Year" in 1988? In which year did Albert Einstein win the Nobel Prize and in which category?

See inside for the answers.

The aorta is the largest blood vessel in the human body and travels down from the heart through the torso supplying the organs with oxygenated blood before bifurcating into arteries that supply the lower limbs. AAA is a weakness and bulging in this vessel, much like an old garden hose may have a bubble or balloon if the outer surface is damaged. There are few physical symptoms, and without a screening, many aneurysms go undetected. When an AAA ruptures, usually sudden severe pain occurs as blood pumps into the abdominal cavity and can cause death within minutes.

Men are four times more likely to have AAA than women. Other factors that put patients at a higher risk of AAA include:

- Smoking
- High blood pressure
- Overweight or obese
- Older than 60
- Family history of AAA or other vascular or heart diseases
- Atherosclerosis
- Sedentary lifestyle
- Injury to the abdomen



While you might expect that treatment for AAA has changed dramatically since 1868, it's also changed dramatically since 1989. Innovative stenting procedures and more efficient open surgeries have saved thousands of lives.

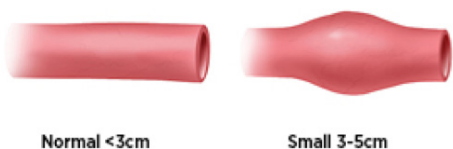
With all these leading edge treatment options, how will you know which is right for your patient? This article will take you through several patients, their symptoms, their health issues, and the treatment options most often recommended by board certified vascular and endovascular surgeons.

Patient A is an overweight male with slightly elevated blood pressure, age 58.

Evidence of an AAA was found during a screening for an unrelated issue. Upon referral to a vascular specialist, the surgeon orders a CT scan to determine the size and shape of the AAA. Because his AAA was less than 5.5 centimeters in diameter, it has a much lower risk of rupturing.

The vascular surgeon orders annual imaging tests to monitor the AAA. Patient A has followed his surgeon's advice and is losing weight through a diet rich in vegetables, fruits, and lean proteins, increasing his physical activity, and strictly complying with his blood pressure medication.

When the AAA continues to remain small and no other health issues are present, the vascular surgeon continues to monitor the AAA regularly, and no other treatment may ever be needed.



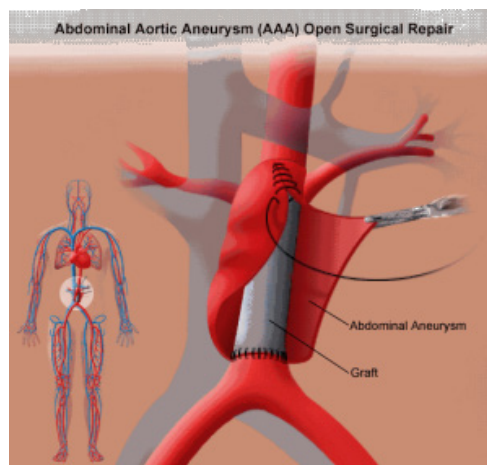
Patient B is also male, age 65, and is a former smoker.

Because of these factors, Patient B used his Medicare Part B coverage to undergo an AAA ultrasound screening, revealing a 6 centimeter AAA at the time of the screening. The vascular surgeon recommends interventional procedures. Patient B and his vascular surgeon review two options: endovascular repair and open surgical repair.

While many physicians previously considered open surgical repair (OSR) the gold standard in AAA treatment, endovascular aneurysm repair (EVAR), or stenting, is fast becoming the preferred intervention, with 80-85% of

patients now choosing EVAR.

In OSR, the vascular surgeon makes a large incision in the abdomen to expose the aorta. The surgeon opens the aneurysm and stitches into the aorta a graft, a tube made of polyester or polytetrafluoroethylene. The aorta is closed, and the incision is then closed. OSR has a longer procedure time, at least three times the hospital stay duration, and a longer recovery. The chance of infection is also increased.



EVAR is minimally invasive, meaning there is no large incision. It can often be accomplished percutaneously with access into the bilateral common femoral arteries at the groin, requiring incisions of only 1-2 cms. Via sheath access in the femoral artery, a collapsed stent (a tube made of wire and fabric) is inserted and advanced to the aneurysm location. The stent is expanded to seal off the aneurysm



and provide a new flow channel to prevent rupture. EVAR has been shown to have a lower mortality at 30 days after surgery, but does have a slightly higher risk for the need of reintervention due to endoleaks - the continual leaking of blood into the aneurysm sac, despite the stent.

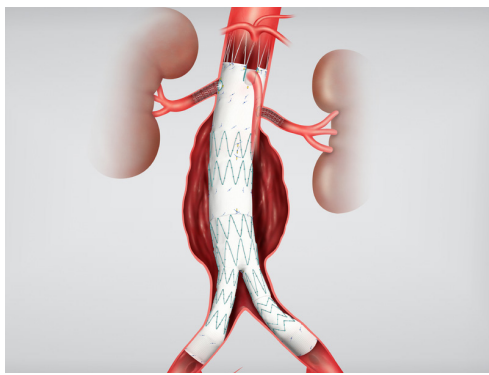
Patient C is a male, age 79. He smokes, but is active and otherwise healthy.

This patient felt a "heartbeat" in his abdomen and consulted his primary care physician, who referred him to a vascular surgeon. The CT scan results confirmed a large AAA, located above the renal arteries, and smaller aneurysms within the pelvic or iliac arteries.

In years past, the only option for Patient C would have been an OSR, risking serious complications with blood flow to the lower pelvis that can lead to pain, erectile dysfunction and disability. However, with advances in stent mechanics, Patient C and his vascular surgeon are now able to choose an EVAR with a fenestrated stent - a unit made up of several different stents sized to fit a patient's anatomy. The fenestrated stent excludes the aneurysm and leaves blood flow to the lower pelvis unobstructed.

Precise measurements taken during CT scan of Patient C's anatomy determine which stents will be used during the procedure. Stents can be available to the vascular surgeon within 24 hours, so EVAR is an option for emergency procedures.

Again, percutaneous access is used with two small incisions in Patient C's groin, for treatment of the iliac aneurysm and the aortic aneurysm. A total of four stents make up Patient C's fenestrated stent; a trunk, a bridging component, an iliac branch stent and an internal iliac branch



component. The trunk stent repairs the AAA and the remaining pieces repair the lower aneurysms, all while keeping oxygenated blood flowing to the pelvis. While the stents are not custom made, they are built within the patient's body from units that exactly match the patient's anatomy.

As with standard EVAR, a fenestrated stent EVAR has a shorter procedure time, less risk of infection, shorter hospital stay, and shorter recovery than OSR. As Patient C recovers, he is also in a smoking cessation program to help him quit tobacco permanently.

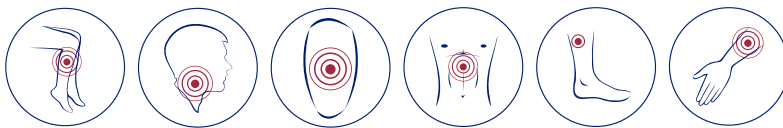
AAA often does not present with symptoms until a rupture, and 90% of ruptures are fatal. In some cases, your patient may complain of a pulsing in the abdomen, back pain or deep pain in the abdomen or the side of the abdomen.

When any of your patients has a family history of AAA, or is a man over age 65 who has smoked at least 100 cigarettes in his lifetime, Medicare Part B will cover AAA ultrasound screening. Please urge your patients with these risk factors to take advantage of this screening.

When an AAA is found in your patient, it doesn't have to mean OSR or even EVAR. It does necessitate an immediate referral to your vascular surgeon partner.

The AAA must be accurately measured and analyzed and a plan for a future of good health determined quickly.

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Arm your patients with AAA knowledge by giving them an informational bookmark when you see a patient who may be at risk. Email your mailing address to vascular.edu.foundation@gmail.com. We'll send you a free packet of 50 bookmarks to help you provide exceptional patient care.



About the author, Dr. Patrick Coffey

Award-winning **Dr. Patrick Coffey** earned Vascular and Endovascular Fellowship at Deborah Heart and Lung Center and is board certified.

Dr. Patrick H. Coffey is an osteopathic physician, helping the body heal with traditional medications and interventional procedures along with exercise, nutrition, and lifestyle.

Dr. Coffey is committed to patient and peer education, speaking about amputation prevention, vascular disease, wound care and minimally invasive techniques.

When you have questions about vascular care for your patients, reach out to Dr. Patrick Coffey at 607-768-0542.

Which association awarded Lucille Ball "Woman of the Year" in 1988? In which year did Albert Einstein win the Nobel Prize and in which category?

ANSWERS: Hasty Pudding Theatricals gave Lucille Ball "Woman of the Year" in 1988. Albert Einstein was awarded the Nobel Prize in Physics in 1921.

Inside: No one size fits all treatment for abdominal aortic aneurysms.

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