



Vascular Specialists of Central Florida, Inc.

Endovascular Repair of Abdominal Aortic Aneurysms

by Charles S. Thompson, M.D.

Abdominal aortic aneurysm (AAA) repair has become a hot topic for media and medical publications alike. Interest has been heightened by news of public figures who have had AAA repairs including Senator Bob Dole and Rodney Dangerfield. Joe DiMaggio, Roy Rogers, Conway Twitty, Bob Uecker, Charles DeGaulle, George C. Scott, Lucille Ball and Albert Einstein had AAA as well. It is now the 10th leading cause of death with the number of new cases per thousand people increasing in the last decade. Prevalence among hypertensive, elderly patients is now an impressive 10%. The Wall Street Journal recently ran a series of articles calling for the nationwide AAA screening.

Focused screening makes sense, when you consider that most patients are asymptomatic when their AAA is discovered and rupture usually results in death. Although Medicare currently does not reimburse for focused screening ultrasonography for abdominal aortic aneurysms, recent studies from the United Kingdom suggest it is cost effective when applied to "at risk" populations. It seems that screening is on the horizon. Until then, however, the majority of aneurysms will be found incidentally during routine physical examinations or during radiographic studies performed for other reasons.

Advances in anesthesiology, critical care medicine, and surgical techniques have made aneurysm repair safer and more accessible. Traditional surgical repair involves laparotomy, aneurysm resection, and graft placement. Typical hospitalization lasts about 6 or 7 days and includes an intensive care unit stay. Patient recovery is measured in weeks to months. Perioperative and postoperative morbidity seems to be determined by comorbidities, usually cardiac or pulmonary. Medical therapies, laparoscopic repair, mini-laparotomy repair, and risk reduction strategies have not had an appreciable effect on the treatment of aneurysms. Gene therapy with protease inhibitors remains an interesting but elusive concept.

The more tangible improvements in aneurysm repair involve the use of catheter based procedures and minimally invasive techniques. Endovascular aneurysm repair (EVAR) was pioneered in the early 90's by physicians searching for an alternative to open aneurysm repair. The original procedure was performed by a physician in Argentina looking for a technique to treat five high-risk patients with AAA. The success led to intensive research and rapid technological advances. By 1998, the FDA approved the use of endoluminal devices for the repair of AAA. These composites of metallic stents surrounded by graft materials are placed into the aorta through the femoral arteries and are deployed with the assistance of fluoroscopic units in the specialized endovascular suites. Recent data on the more than 30,000 implants worldwide have found the procedure to be durable and effective. All clinical trials have shown a markedly shorter hospitalization and recovery time compared to open procedures. Most trials have shown equivalent or reduced mortality and morbidity compared to historical control series of open abdominal aneurysm repair under ideal situations, in spite of the fact that the stent graft patient is usually a higher surgical risk.

Preparation for endovascular stent graft repair involves preoperative angiography, computed tomography, or magnetic resonance imaging. Computer modeling technology allows for accurate sizing of aneurysms for graft

selection. Several commercial and experimental devices are available and each has its characteristic strengths. Selection of patients for implantation involves a variety of anatomic and physical factors. Not all patients may be candidates for the procedure. The procedure is complex, and usually performed at a large referral center. The resources needed for the maintenance of an endovascular program are extensive. But the benefit is substantial. Most patients avoid an ICU stay, spend only a few days in the hospital after the procedure, and return to their previous levels of activity within a few weeks. The difference in subjective outcome for EVAR patients is dramatically better when compared to conventional open repair. Post procedural care of the patient requires a commitment to diligent surveillance, including a regimen of periodic imaging and physician follow-up.

Long-term results appear to be equivalent to open aneurysm repair in most studies. Resulting high patient satisfaction drives much of the advancement in EVAR technology. Coupled with the advent of screening for an aging population, EVAR promises to reduce overall mortality from AAA. The future of EVAR will involve the application of the repair method to more complex thoracic and branched vessels diseases. Indeed, the attention is warranted in this revolutionary technology.

Orlando

1200 Sligh Blvd

Orlando FL 32806

Telephone: (407) 648-4323

Fax: (407) 839-1493

Clermont

1120 Citrus Tower Blvd Suite 120 Clermont, 7460 Doc's Grove Circle

FL 34711

Telephone: (352) 241-7585

Dr Phillips

7460 Doc's Grove Circle

Orlando, FL 32819

Telephone: (407) 648-4323

www.arteryandvein.com