

Heart Beat

Health information for patients and physicians from Cardiology Physicians, P.A.

A NEW TREATMENT FOR A HEART VALVE PROBLEM?

John J. Kelly III, M.D., F.A.C.C.

Some patients develop problems with the function of the valves of their heart. This can either be due to a valve not opening or closing properly. It is very common for the valve at the top of the heart, the aortic valve, to become stiff as people age. The aortic valve fits atop the major pumping chamber of the heart. When the heart muscle squeezes, the blood is forced through the aortic valve out to the entire body. This valve can develop deposits of calcium and scar tissue over the years. This can limit the valve's ability to open properly. This can eventually reach a point where the valve opening is very small. No matter how hard or how fast the heart squeezes, only so much blood can go through that tiny opening. This can cause problems such as heart failure, chest pain, lightheadedness and loss of consciousness. Cardiologists refer to this problem as aortic stenosis.

The standard treatment for aortic valve narrowing, or aortic valve stenosis, has been surgical replacement of the valve. There are different types of valves that can be used to replace the native valve. This includes mechanical valves, valves made from animal tissue and human valves. The problem with surgery is that it does require general anesthesia and opening the chest. Surgery poses some potential risks and complications. There is, of course, some discomfort involved with undergoing this procedure. Patients must also allow some time for full functional recovery, usually 6 to 8 weeks. Fortunately, over the years, surgery has become safer and more effective. The expected risk of dying from a complication related to valve surgery for an ideal candidate is less than 4%. The mortality rate associated with aortic valve surgery does increase substantially with increasing age, a weak heart muscle and other comorbid conditions. These factors result in many patients not being even referred for the consideration of surgery. The risk of the surgery might outweigh the potential benefits in this patient group.

There is a new technique for treating patients with aortic valve stenosis that is being studied in clinical trials. This is actually using a catheter to position a new valve in the aortic position.

The valve is then placed utilizing balloon expansion. The approach is similar to that used in cardiac catheterization and angioplasty. There are different types of techniques for doing this new procedure and different types of valves being studied. It is hoped that with more experience this type of treatment may ultimately offer lifesaving treatments for patients with aortic stenosis felt to be too high risk to undergo standard surgery.

The catheter based treatment of aortic stenosis is now undergoing clinical evaluations. This is certainly not the standard of care at present and it is not likely ever to completely replace open heart surgery for the routine treatment of aortic stenosis. It is hoped that this new technique may offer hope for patients not felt to be good candidates for conventional surgery. Cardiology Physicians is closely monitoring developments in this area and will keep our patients informed.

In this issue...

A New Treatment for a Heart Valve Problem	1
Avoiding Blood Clots While Traveling	2
Welcome Dr. Furey.....	3
Yes You Can Have Red Meat...Once in a While!	3
A New Option for Patients with Atrial Fibrillation	4
Peripheral Arterial Disease and Women: A Clandestine Affair	5

Avoiding Blood Clots While Traveling

Gilbert A. Leidig Jr., M.D., F.A.C.C.

Venous thromboembolism (VTE) refers to blood clots involving the deep veins of the legs and/or the arteries traveling to the lungs. VTE is the third most common cardiovascular illness after heart attack and stroke. Although the exact incidence of VTE is unknown, it is believed there are approximately 1 million cases of VTE in the United States each year, many of which represent recurrent disease. Nearly two thirds of all VTE events result from hospitalization and approximately 300,000 of these patients die. Pulmonary embolism is the third most common cause of hospital-related death and it is the most common preventable cause of hospital-related death.

Venous thromboembolism results from a combination of hereditary and acquired risk factors, also known as thrombophilia or hypercoagulable states. (Box 1) Vessel wall damage, venous stasis, and increased activation of clotting factors first described by Rudolf Virchow, over a century ago and known as Virchow's triad, contribute to VTE. Cardiovascular risk factors including hypertension, diabetes mellitus, cigarette smoking, and high cholesterol levels have been linked to acute pulmonary embolism (PE). (1)

Box 1: Major Risk Factors for Venous Thromboembolism

Hereditary

- Factor V Leiden mutation
- Prothrombin gene mutation
- Protein C or S deficiency
- Antithrombin deficiency
- Hyperhomocysteinemia
- Elevated levels of factor VIII
- Dysfibrinogenemia

Acquired

- Surgery
- Trauma
- Medical illness (heart failure, chronic obstructive pulmonary disease)
- Immobilization
- Pregnancy, oral contraceptives, hormone replacement therapy
- Indwelling central venous catheters or pacemakers
- Cancer or certain cancer treatments
- Antiphospholipid syndrome
- Heparin-induced thrombocytopenia

- Inflammatory bowel disease
- Myeloproliferative disorders
- Air travel
- Body mass index >30
- Previous episode of venous thromboembolism

Symptoms of VTE include leg pain and swelling that is usually unilateral but can involve both legs. Pulmonary embolism is heralded by shortness of breath. Chest pain may occur with profound hypoxia or in cases of peripheral emboli causing a pleural reaction. Diagnosis requires confirmation with venous duplex ultrasound of the legs or in cases where pulmonary embolism is suspected either contrast spiral computed tomography or ventilation-perfusion scanning is warranted. Early diagnosis is critical as delay can lead to death from recurrent pulmonary emboli or can lead to chronic swelling of the legs due to chronic venous injury.

Treatment is with unfractionated or low molecular weight heparin (LMWH) transitioning to warfarin. Subcutaneous factor XA inhibitors may also be used. Oral thrombin or XA inhibitors are not yet approved to treatment of VTE. Warfarin may be stopped after 3-6 months unless there have been recurrent events or chronic risk factors such as cancer or hereditary thrombophilias are present. For patients not able to take anticoagulants inferior vena cava filters are an option. For massive pulmonary embolism with hemodynamic compromise, either thrombolytic therapy or surgical thrombectomy are options.

Prevention of VTE is effective. Subcutaneous unfractionated or low molecular weight heparin is effective prevention in hospitalized medical and postoperative patients. The factor XA inhibitor, fondaparinux is effective and is given subcutaneously. Graduated compression stockings or intermittent pneumatic compression stockings are used in post operative patients who cannot take anticoagulants. The thrombin inhibitor, dabigatran, is approved for VTE prophylaxis in Canada but not in the United States. Factor XA inhibitors are contraindicated in patients with creatinine clearance less than 30. LMWH required dosage reduction in patients with creatinine clearance less than 30 and is to be avoided in dialysis patients.

Airline travel increases the risk of VTE by 3.2 times that of the non-flying healthy population. Long travel by automobile, train or bus can also increase the risk. Statistics show that 1.65 million people flying longer than eight hours and 4.8 per million over 12 hours will have VTE. The risk is highest for first 2 weeks after the flight but clots may occur up to 2 months later. (1)

During air travel frequent flexion and extension of the calf muscles is effective in VTE prevention as well as walking for 5 minutes about the cabin every hour. Effective exercises include foot pumps, ankle circles and knee to chest stretches. Maintaining hydration with water intake is important as well as limiting alcohol and caffeine intake. Travelers are also advised to avoid tight fitting clothing. For travelers at high risk based on the table above, especially if having had recent prolonged hospitalization or hip or knee surgery, ongoing cancer treatment, or prior travel with demonstrated VTE, then either graduated compression stocking or subcutaneous LMWH just before takeoff is recommended. (1)

Travel safely and have fun.

*I. Bartholomew, John.
Cleveland Clinic Journal.*

Volume 78. Number 2. February 2011. Pg. 111.



Welcome Dr. Furey!

*Kelley Vance
Marketing Manager*

Cardiology Physicians, P.A. is very excited to welcome Dr. Anthony Furey to our practice. Dr. Furey is a board certified cardiologist,

with certifications in nuclear cardiology and echocardiography. As most of you are already aware, Tony has cared for cardiac patients in Delaware for 14 years. He has earned an outstanding reputation in our medical community. Dr. Furey is an excellent addition to Cardiology Physicians, P.A., a practice dedicated to providing the highest quality cardiovascular care in the state of Delaware and its surrounding areas.

As of March 14, 2011, Dr. Furey will begin practicing at both of our convenient locations, Abby Medical Center in Newark and Foulkstone Plaza in North Wilmington. Your patients may begin scheduling appointments immediately. Dr. Furey will also be treating patients at area hospitals; Christiana, Wilmington, and St. Francis.

Cardiology Physicians, P.A. is taking all the steps necessary to ensure a seamless transition for all of Dr. Furey's current patients. In addition to supporting his existing patients, Tony will establish new patient relationships as well. We look forward to working with you while continuing to provide comprehensive cardiovascular care to your patients.

Thank you for your continued support.

Yes You Can Have Red Meat... Once in a While!

John J. Kelly III, M.D., F.A.C.C.

You may remember my article from last issue, What is a Heart Smart Diet; included in this issue is another recipe to try:

(To view the article, log onto www.cardiocppa.com)

Ingredients

- 1 lb flank steak
- 3 clove garlic, minced
- 2 Teaspoon olive oil
- Salt & freshly ground black pepper
- Tomato salsa

Directions

Marinate flank steak in garlic, olive oil, salt, and pepper to taste for at least 30 minutes and up to overnight.

Heat a grill or sauté pan and sear steak about 3 minutes on each side, or until browned. Then lower heat, cover pan, and continue to cook 5 minutes more for medium doneness. Slice the steak against the grain into ¼-inch-thick strips.

Serve with salsa on the side.



over

A NEW OPTION FOR PATIENTS WITH ATRIAL FIBRILLATION

Anthony W. Clay, D.O., F.A.C.C.

Atrial fibrillation is the most commonly sustained arrhythmia in adults. When a patient is in AFib, we manage the rate of the heart and try to achieve the normal rhythm. A patient in AFib, has a heart that is “out of sync”. The bottom two chambers which supply the blood pressure are not following the normal, natural pacing of the upper two chambers. The upper two chambers (atria) are just “vibrating”, not contracting. In other words, they are fibrillating. Some people tolerate atrial fibrillation without symptoms. However, others feel poorly, such as, fatigued and out of breath.

In contrast, some episodes of atrial fibrillation in the atria are not contracting. Therefore, slow moving and stagnant blood gathers. Since the blood is pooling, it can form clots. If the clot was to break loose (embolus) and enter the brain, it could cause a stroke. Strokes are caused for many reasons. However, atrial fibrillation is one of the leading causes of stroke. The risk of stroke in an individual patient varies with other risk factors. Over the years, Coumadin has been our most effective drug in reducing the risk of stroke from atrial fibrillation

We have managed blood coagulation for over sixty years with Coumadin. You might find it interesting that Dwight Eisenhower was an early user of Coumadin. Blood coagulates by a series of cofactors in the blood. One of these cofactors works through Vitamin K which Coumadin interferes with. By interfering with Vitamin K, Coumadin “thins” the blood in turn causing the decreased ability to clot.

There can be complications in treating Afib patients with Coumadin. Coumadin has to be carefully monitored with monthly blood tests. This is to ensure that the blood is thin; however too thin can cause bleeding complications. Some bleeding complications can be serious, such as bleeding into the brain or internal bleeding. Since Coumadin interferes with Vitamin K intake your diet may be altered to extract Vitamin K, found in leafy green vegetables, such as spinach. In some cases, Vitamin K happens to be an antidote for bleeding out, caused from extreme Coumadin levels. Coumadin can also be affected by alcohol and has many drug interactions. Some interactions include drugs used to treat atrial fibrillation, in additions to antibiotics.

Aspirin is another option for avoiding blood clots in an AFIB patient. Aspirin is not an anti-coagulant, it is an anti-platelet. It works when platelets in the blood, clump together to form a plug to aid in the clotting process. Aspirin is useful in preventing strokes but in cases of atrial fibrillation, it is not as effective as Coumadin.

Now, for the first time in the last sixty years, we have an alternative drug named Dabigatran (Pradaxa). It works further down the coagulation cascade to inhibit thrombin, a final cofactor in blood clotting. Therefore, Vitamin K cofactors are not involved with this drug. There are no dietary restrictions (i.e. foods such as spinach containing Vitamin K) for Dabigatran. An additional benefit is the patient is not required to have repetitive blood tests. In a study of 18,000 patients, Dabigatran was as least as effective in preventing strokes as its counterpart, Warfarin. Additionally, the bleeding risks were similar.

As with any new drug, you will need to discuss the risks and benefits with your physician. Furthermore, cost may come into play. All newer drugs cost more than longstanding generic options. For now we are excited to have some alternatives.

Our practice will continue to follow the effects of Dabigatran and keep our patients up to date.

Peripheral Arterial Disease And Women: A Clandestine Affair

Alan Micklin, M.D., F.A.C.C.

In recent years the prevalence of heart disease as the #1 killer in women has become better recognized. Peripheral arterial disease (PAD) is a similar process but involves narrowing of the arteries in the leg rather than the heart and often is considered a disease predominantly affecting males. However, recent evidence suggests that not only is peripheral arterial disease as common in women as men but also may lead to greater disability.

Approximately 20% of Americans older than age 65 suffer from peripheral arterial disease but only one-third are symptomatic. Based on a recent survey conducted by the PAD Coalition, only 28% of American women have ever heard of PAD, a very common and dangerous condition that affects nine million Americans, half of whom are women. This relationship equates to one female in 20 over age 50 and one in five over age 70. Although PAD can cause symptoms such as cramping in the legs, pain at rest, numbness or skin discoloration, the majority of cases early in this disease are asymptomatic. In fact, women may even be more likely than men to have PAD without experiencing symptoms as studies have shown that 50 to 90% are asymptomatic or have symptoms unrecognized to be related to PAD. Overall, only one in three patients with PAD has symptoms suggestive of any problem with their feet or legs.

Despite the lack of symptoms in most PAD cases, it is extremely important to obtain early diagnosis. PAD occurs when arteries in the legs develop plaque formation leading to diminished blood flow. However, the same process of plaque formation that occurs in the legs is occurring simultaneously in other areas of the body such as the arteries that supply the heart and brain. In the long-term, people with PAD have four times the risk of heart attack or stroke. In addition, in a person with a very low ABI evaluation, which we describe below, has a two to three times increased risk of five year cardiovascular death compared to a patient with a normal ABI.

In addition to the markedly increased risk of heart attack and stroke caused by the presence of PAD, a recent study published in the Journal of the American College of Cardiology also shows that peripheral arterial disease produces disability in women faster than men. In a recent study performed at Northwestern University and several sites throughout the United States, 380 men and women with PAD were evaluated and followed for worsening functional capacity up to four years. The participants all completed the six minute walk at the initiation of the study and CT scanning of the calf muscle characteristics was measured biannually. Men and women were then measured for outcomes including becoming unable to walk for six minutes continuously among participants who had been able to walk for six minutes at baseline. The patients also were evaluated for mobility lost, defined as become unable to walk for a quarter-mile or to walk up and down one flight of stairs without assistance. The results were adjusted for age, race, body mass index, physical activity and co-morbidities.

Results showed at four years of follow up that women were more likely to become unable to walk for six minutes continuously and more likely to develop mobility disability. Women also had faster declines in walking velocity and in the distance achieved in the six minute walk compared to men. The more rapid functional decline and greater disability in women was attributed to smaller baseline calf muscle area among women with PAD.

To summarize, women have an incidence of PAD equal to men, have greater functional loss compared to men and have markedly elevated rates of heart attack and stroke equivalent to males. Therefore, it is very important to identify early the presence of PAD and treat it appropriately. PAD is easily screened for by a simple ABI evaluation which involves measuring blood pressures along the length of the upper and lower legs and compare blood pressures to the arms. The following populations should be considered for screening:

1. Patients over age 50.
2. Patients with family history of vascular disease such as PAD, aneurysm, heart attack or stroke.
3. Patients with high cholesterol levels.
4. Patients with diabetes mellitus.
5. Patients with any history of smoking.
6. Patients with a personal history of hypertension, heart disease or other vascular disease.
7. Patients with pain in the legs or feet that awaken you at night.
8. Patients with pain while walking including cramping and tiredness in the lower extremity muscles

Therapy for PAD is typically initiated with conservative measures. A regular walking program and exercise is critically important. Smoking cessation, lipid therapy and blood pressure control should be initiated. Patients that do not respond adequately or have worsening symptoms may also be treated with revascularization procedures such as stenting or vascular surgery.

Patients that fit into one of the above mentioned categories and risk groups should discuss screening ABI evaluation with their physician. The prognosis of peripheral arterial disease can be greatly improved with early intervention.



www.cardiocppa.com

Physicians:

John J. Kelly III, M.D., F.A.C.C.	Anthony W. Clay, D.O., F.A.C.C.
Gilbert A. Leidig Jr., M.D., F.A.C.C.	Alan Micklin, M.D., F.A.C.C.
Brian H. Sarter, M.D., F.A.C.C.	Ehsanur Rahman, M.D., F.A.C.C.
Gaetano N. Pastore, M.D., F.A.C.C.	Anthony B. Furey, D.O., F.A.C.C.

Locations:

Abby Medical Center, Suite 200 Newark, DE (302) 366-8600	Foulstone Plaza, Suite 201 Wilmington, DE (302) 478-5055
--	--

Services:

Clinical and Consultative Cardiology

Coumadin Care Center

Interventional Procedures (coronary and peripheral)

-cardiac catheterization -angioplasty -stent implantation
-renal and lower extremity angioplasty/stenting

Peripheral Vascular Testing

-ABI Testing-carotid duplex	-abdominal aortic duplex
-renal artery duplex	-lower and upper extremity duplex
-venous duplex	-arterial duplex

Electrophysiology

-pacemaker implantation	-AICD implantation
-curative ablation therapy	-transtelephonic pacemaker checks

Non-Invasive Diagnostic Center

-nuclearSPECT imaging	-stress echocardiography
-2D echo with Doppler	-loop and holter monitoring



Abby Medical Center
One Centurian Drive, Suite 200
Newark, DE 19713