

# ANGIOGRAM



## A MESSAGE FROM OUR CEO



**SANJIV  
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MD, FACS

At the Center for Vascular Medicine, we believe in the words of Mahatma Gandhi:

*"A customer is the most important visitor on our premises. They are not dependent on us. We are dependent on them. They are not an interruption in our work. They are the purpose of it. They are not an outsider to our business. They are a part of it. We are not doing them a favor by serving them. They are doing us a favor by giving us an opportunity to do so."*

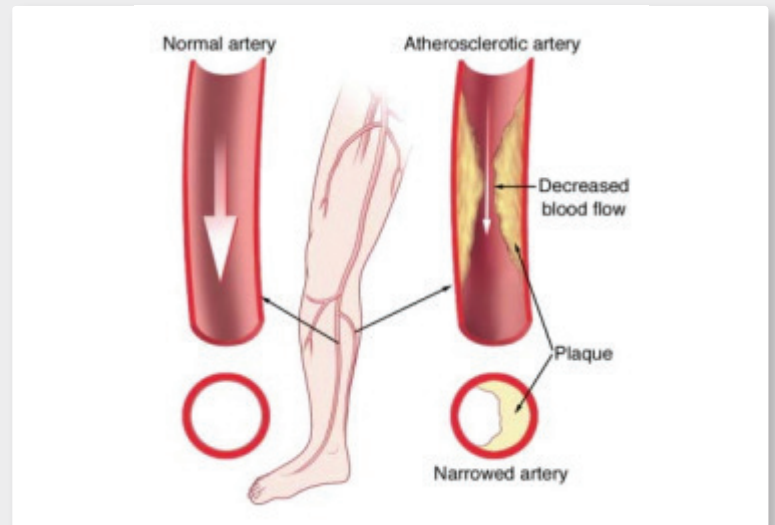
We do our utmost to provide immediate interventional care that may provide some relief of symptoms. However, please remember that long-term follow-up is an essential component to your overall vascular health. As a result, I must emphasize that today we are entering into a partnership. For optimal results, we must both keep our promises. We promise we will treat you with intellectual integrity and dignity. We pride ourselves on offering the most advanced and patient-focused diagnostic and therapeutic modalities for the treatment of vascular disease.

During the course of your treatments there will come a time when you may debate the need to call your doctor, PA or nurse after hours. Follow this simple rule "When in doubt, always call." Amongst other things, we promise to be always available to our patients.

## WHAT IS PERIPHERAL ARTERIAL DISEASE?

Peripheral arterial disease (PAD) is a disease in which a substance called plaque builds up in the arteries that carry blood to your head, organs, and limbs. Plaque is made up of fat, cholesterol, calcium, fibrous tissue, and other substances in the blood. PAD usually affects the arteries in the legs, but it also can affect the arteries that carry blood from your heart to your head, arms, kidneys, and stomach.

When plaque builds up and clogs the arteries, the condition is called atherosclerosis, also known as "hardening of the arteries." Over time, plaque can harden and narrow the arteries, reducing the amount of blood that can flow through them and limiting the flow of oxygen-rich blood to your organs and other parts of your body.



A normal artery is shown on the left. The right shows an artery narrowed by atherosclerosis, causing PAD. Photo courtesy of ([www.michiganmedicalreport.com](http://www.michiganmedicalreport.com))

## RISK FACTORS

Approximately 8 million people in the United States have PAD, including 12-20 % of individuals older than age 60.

- SMOKING
- DIABETES
- RACE
- OBESITY
- HIGH BLOOD PRESSURE
- HIGH CHOLESTEROL
- OLDER THAN AGE 60
- FAMILY HISTORY

## SYMPTOMS

The classic symptom of PAD is pain in the legs with exertion relieved by resting. However, up to 40% of individuals with PAD have no leg pain.

- HAIR LOSS
- COLDNESS
- CRAMPING
- MASS
- NON-HEALING ULCERS
- DISCOLORATION
- NUMBNESS
- HEAVINESS
- DECREASE IN MUSCLE TONE

## WHAT IS AN ANGIOGRAM?

An angiogram (also called an arteriogram) is an image taken of blood vessels in an outpatient procedure done in the X-ray room. Commonly angiograms can see the arteries near the heart, lungs, brain, head and neck, legs or arms, and the aorta.

Because arteries are not normally visible in X-rays your doctor needs to make use of a special dye and camera; this is called fluoroscopy. The dye is delivered through a catheter that is guided from a blood vessel in the upper thigh all the way up to the heart. Once the catheter is in the right position, the dye is injected and it goes into the arteries. An X-ray is then taken at the precise time the dye flows through the arteries. The dye is later excreted in the urine.

## BENEFITS OF ENDOVASCULAR PROCEDURES

### MINIMALLY INVASIVE

Minimally invasive outpatient procedures require no hospital stay with a short recovery period. Most procedures allow patients to return to normal activity within a few days.

### LOWER LEVEL ANESTHESIA

Patients receive minimal anesthesia delivery under constant monitoring.

### HIGH SUCCESS RATE

There is a high success rate of endovascular procedures with relief of symptoms.

## RISKS OF ENDOVASCULAR PROCEDURES

### CATHETER-RELATES RISKS

Any procedure that involves placement of a catheter inside a blood vessel carries certain risks. These risks include damage to the blood vessel, bruising or bleeding at the puncture site, and infection. The chance of any of these events occurring is less than one percent.

### ALLERGY TO X-RAY CONTRAST MATERIAL

Patient may have an allergic reaction to the x-ray contrast material used during endovascular procedures. These episodes range from mild itching to severe reactions that can affect breathing or blood pressure. Patients having procedures are carefully monitored by a physician and a nurse during the procedure to prevent, and if necessary, treat those conditions.

### X-RAY EXPOSURE

Endovascular procedures are done under x-ray. Exposure levels usually are well below those where adverse effects on the patient or future children would be a concern.

### POTENTIAL ADVESE EFFECTS ON THE KIDNEYS

Patients with a history of poor kidney functions are at higher risk of further damage. Blood work will be drawn to help identify patients at risk and levels will be monitored accordingly. IV fluids will also be given during and after the procedure to dilute the dye and filter the dye through the kidneys. In rare cases additional medication may need to be given.

## TREATMENT OPTIONS

### ANGIOPLASTY WITH STENT PLACEMENT

A procedure using a special catheter with a balloon that can inflate to open blockages in the artery and placing one or more stents (an artificial 'tube' inserted to help restore proper blood flow) into the artery.

### LASER ATHERECTOMY

A procedure using a catheter that emits pulses of light energy that are capable of gently vaporizing plaque and other matter into tiny, microscopic particles that are smaller than a red blood cell.

### BYPASS GRAFTING

Surgery to re-route blood supply around blocked arteries in the legs.

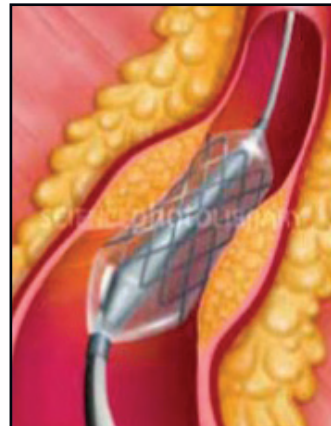
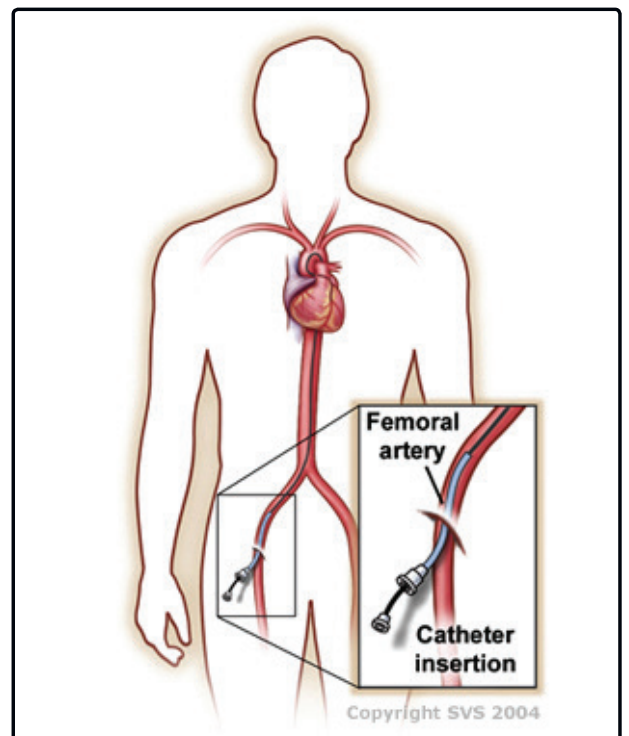


Image of  
balloon  
angioplasty



## PREOPERATIVE INSTRUCTIONS

- You will need to have current blood work done and may be asked to have an EKG prior to your procedure if indicated.
- Arrange for someone to drive you to the facility and home afterwards
- Do not eat or drink after midnight the night before your scheduled procedure.
- If you are prescribed any special medications that need to be taken for your procedure, please take all doses prescribed and as ordered.
- Please give at least 48 hours' notice for rescheduling when possible. Please contact us as soon as possible for last minute conflicts.
- We will provide you with specific pre-procedure instructions. Please follow them closely.

## MEDICATIONS

Outside of certain blood thinning agents, most medications can be continued immediately following your procedure. Medications such as Coumadin (Warfarin) and injectable Heparin/Lovenox are potent blood thinners that can cause delayed bleeding from the puncture site. We usually ask that these blood thinners be held for 1-2 days following the procedure, we will specify when to begin use of these medications.

If you take aspirin, Plavix or Aggrenox, you may continue use of these medications, so long as there are no signs of delayed bleeding or swelling at the puncture site.

## WHAT TO EXPECT DURING YOUR PROCEDURE

You will be give medicine through an IV to keep you comfortable but awake. Local anesthetic is usually given in the groin area where a needle will be inserted. The catheter is threaded through this needle. You will feel pain when the needle breaks the skin, but the passage of the catheter through the blood vessel is painless. You will feel a warm sensation when the injected dye spreads through the arteries.

During the procedure you will asked to stay still and not move so that the images that are taken will be clear. Afterwards, the catheter is removed and the area where the catheter was removed is pressed firmly for about 30 minutes to stop the bleeding. You will need to lay flat and keep your leg straight for two hours following the removal of the catheter.

The angiogram procedure usually takes about an hour and 2-3 hours for recovery. Expect your total time in the office to be 4-6 hours.

If you have any questions regarding insurance matters, co-payments, deductibles, authorizations or referrals please contact our experienced team of billing specialists.

We also offer a *Patient Financial Liaison* available to assist you Monday through Friday at

**301.982.2000 Ext 311 & 315**

## POSTOPERATIVE INSTRUCTIONS

- Refrain from any heavy lifting (i.e. no more than 10 pounds), straining, pushing or impact exercises (i.e. running, jogging, cycling) for the first 3 days. You may walk, climb steps and even drive, so long as you do not have excessive bruising, swelling or pain at the puncture site.
- You will be discharged with a dressing over the puncture site. This may be removed the next morning. Please inspect the puncture site daily for the first few days and notify us for any significant changes;. Bruising around the area may be present. If you notice bleeding, swelling, or increase in bruising apply constant direct pressure over the area and seek medical attention immediately.
- You may shower within 24 hours of your procedure. We ask that you refrain from soaking in a bathtub, hot-tub or pool until the puncture site is healed.
- You will be asked to follow up in one week post procedure. It is very important to keep this appointment.



### PLEASE CALL OUR OFFICE IF YOU NOTICE ANY OF THE FOLLOWING SIGNS OR SYMPTOMS:

- Increased swelling or bleeding at the puncture site.
- Increased bruising down the leg or by the abdomen.
- Painful, cold leg or foot with or without discoloration.
- Increasing low back, abdominal, or leg pain.

Appointment Date: \_\_\_\_\_

Appointment Time: \_\_\_\_\_

Appointment Location: \_\_\_\_\_



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