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### Annapolis

108 Forbes St., 2nd Floor  
Annapolis, MD 21401



### Greenbelt

7300 Hanover Dr., Ste. 104  
Greenbelt, MD 20770

#### 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.
- Redness, swelling and/or drainage from the puncture site with fever.
- Swollen, painful calf with or without fever.

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 Account Specialist* available to assist you  
Monday through Friday at **301.982.2000**



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# VENOGRAM



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A MESSAGE FROM OUR FOUNDER



SANJIV  
LAKHANPAL  
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.

*Sanjiv Lakhonpal*

WHAT IS A VENOGRAM?

A Venogram is an x-ray of the veins. It uses contrast dye and an x-ray camera (fluoroscopy) to visualize the veins. The veins are not visible under fluoroscopy without the use of a contrast dye. The dye is injected through a soft, flexible catheter that is guided from a vein in the groin and moved to the appropriate site by navigating through the vascular system.

Once the catheter is in the right position, the dye is injected into the veins. X-rays are then taken at the precise time the dye flows through the veins. Images of the veins are then generated to identify any abnormal flow pattern.

For patients with renal (kidney) dysfunction, the dye can be replaced with CO<sub>2</sub> gas, thus lowering the burden on the kidney.

WHAT CAN A VENOGRAM REVEAL?

BLOCKAGES/NARROWING IN THE VEINS

Iliac vein obstruction is a partial or total occlusion of the iliac vein creating insufficient blood flow out of the leg(s) and contributing to venous hypertension. Symptoms can include achiness, heaviness, fatigue and swelling in the lower legs. There may be the presence of varicose veins, darkening of skin or open ulcers on the ankles. Iliac vein obstruction can be thrombotic (associated with blood clot) or non-thrombotic (iliac vein compression).

PELVIC CONGESTION SYNDROME

Pelvic congestion syndrome is a result of pelvic vein and/or ovarian vein dysfunction and/or dilation. Symptoms related to pelvic congestion may include chronic pelvic pain which may worsen with long periods of sitting or standing, onset of menstrual cycle or with sexual intercourse. Other symptoms may include heaviness, fatigue, aching or swelling in the legs. Pelvic varicosities are not visible externally but may be associated with visible varicose veins on the thighs, buttocks, or in the vulvar or genital region. Pelvic varicosities can be viewed with ultrasound and venograms.

VARICOCELE (IN MEN)

Varicocele occurs when the network of veins that leave the testes (pampiniform plexus) become elongated and enlarged similar to varicose veins in the legs. It is a well-known clinical entity that may result in pain, testicular atrophy and infertility.

RISK FACTORS

For all deep vein diseases

- MULTIPLE PREGNANCIES • VARICOSE VEINS • OBESITY
- VENOUS INSUFFICIENCY • PRIOR ABDOMINAL / PELVIC SURGERY
- FAMILY HISTORY • HISTORY OF DEEP VEIN THROMBOSIS (DVT)

TREATMENTS OPTIONS

INTRAVASCULAR ULTRASOUND (IVUS)

Ultrasound probe on the tip of the catheter which allows us to visualize the inside of blood vessels during a venogram.

EMBOLIZATION

Embolization of pelvic varicosities and ovarian vein(s) is performed to block blood flow to the ovarian vein and varicosities by injecting medication to close off the vein(s). A chemical foam is injected into abnormal, congested veins to seal them.

VENOPLASTY

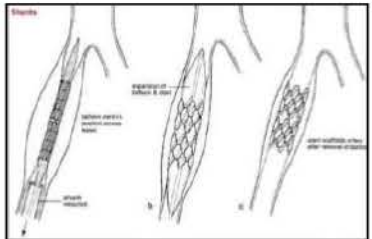
Expansion of narrowed veins with the use of a balloon tipped catheter.

STENTING

Placement of a stent (a metal mesh cylinder) in the iliac vein provides support to keep the vein open. Stent Implants are permanent.



IVUS image of a vein



Placement of stent (metal mesh cylinder)



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 OF 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-RELATED 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 this condition.

X-RAY EXPOSURE

Endovascular procedures are done under x-ray.

EARLY ONSET MENOPAUSE

Approximately one percent of women experience menopause shortly after embolization. This is more common in women 45 years or older.