

IN CIRCULATION

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Sanjiv Lakhanpal, MD



Vinay Satwah, DO



Michael Malone, MD



Gaurav Lakhanpal, MD



Shekeeb Sufian, MD



Krutiben Patel, PA-C



Zoe Zaret, MD

RESEARCH BRIEFS



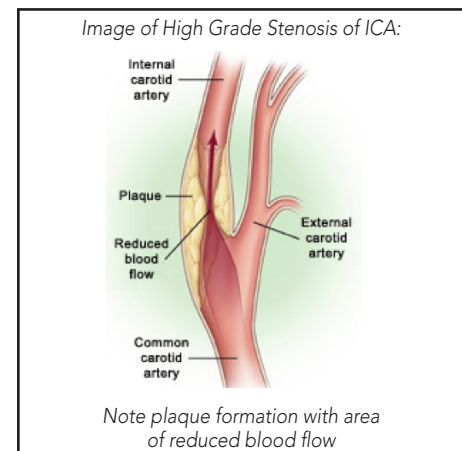
THE PREVALENCE, DIAGNOSIS AND TREATMENT STRATEGIES FOR CAROTID ARTERY DISEASE.

MICHAEL MALONE, MD

Carotid Artery Disease remains a significant cause for Stroke in patients today. A recent study demonstrates that **there are 750,000 strokes per year.** The incidence of stroke is the leading cause of disability. Treatment and the sequelae of stroke is the third leading cause of nursing home admissions.

In one study of prevalence and determination of carotid atherosclerosis in the general population, the **prevalence of carotid atherosclerosis was 25.4% in men and 26.4% in women.** In this study, 630 men and 718 women were evaluated for the presence of carotid disease in the age range of 18-99 years old. In this study, intimal-medial thickening was found in 9.4% of men and 11.7% of women. Plaque prevalence was 13.3% in men and 13.4% in women. The presence of stenotic plaques was 2.7 % in men and 1.5% in women. From this study, the presence of atherosclerotic were significantly decreased in patients less than 39 years old. **There was also a positive association between the severity of carotid disease with age, presence of hypertension, elevated cholesterol and smoking.**

With this newer information, it has revolutionized the treatment algorithm used to treat these challenging patients. Current stroke prevention guidelines advise that evaluation and management of patients with TIA should occur within 1-2 weeks of a TIA to reduce the risk of a future stroke.



NONINVASIVE LABORATORY STUDIES

Noninvasive duplex ultrasound are non-painful, can be performed relatively quickly and give excellent initial information on how to manage these patients. The test usually consists of evaluation of the common carotid artery (CCA), carotid bifurcation, external carotid artery, internal carotid artery and vertebral arteries bilaterally. From this initial test, several pieces of information can be obtained including the degree of stenosis in the vessel of concern, contralateral stenosis in the opposite vessel, involvement or abnormality of the posterior circulation including the vertebral artery as well as involvement



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of the subclavian artery suggesting possible subclavian steal. In terms of evaluating the degree of stenosis with carotid duplex ultrasound, the results are usually classified as ranges based on the peak systolic velocity (PSV), end-diastolic velocity (EDV) as well as gray scale imaging. It is usually classified as less than 50% stenosis, 50-69% stenosis and greater than 70-99% stenosis. Based on the findings of the duplex ultrasound, the patient may be categorized as needing further imaging studies (ie. CT angiogram, MRA or conventional arteriogram), re-evaluation at another time interval with a non-invasive test or recommended for intervention (Carotid Endarterectomy (CEA) or Carotid Artery Stenting (CAS)).

CT ANGIOGRAM/MRA

Both of these modalities will determine the appropriate anatomy and determine if intervention, whether open surgery versus endovascular techniques are appropriate for carotid artery disease. CT angiography uses a CT scanner to produce detailed images of both blood vessels and tissues in various parts of the body. A CT scan is performed while contrast is being injected. After scanning, the images will be processed using a special computer and software and reviewed in different planes and projection. MR angiography (MRA) uses a powerful magnetic field, radio waves and a computer to evaluate blood vessels and help identify abnormalities or diagnose atherosclerotic disease. The study does not use ionizing radiation but will require injection of gadolinium, a contrast material. Gadolinium tends to be less likely to cause an allergic reaction than iodinated contrast material.

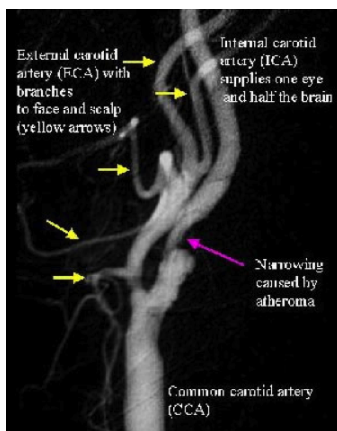


Image of CT Angiogram demonstrating significant stenosis of the proximal ICA caused by the formation of atheromatous plaque.

CAROTID ARTERIOGRAM

The incidence of arteriogram for diagnosis and treatment has been increasing steadily with advent of carotid stenting for high risk surgical patients, redo lesions and "hostile" necks secondary to previous irradiation or previous neck surgery. It was at one time considered the gold standard study, but its prevalence had decreased with new technologies and improvements in imaging with CT scan and MR. However, its popularity has increased with the onset of carotid artery stenting. Although it is more invasive, it gives the option of repairing the abnormality at the time of the diagnostic study. Like with CT angiogram and MRA, there is the exposure to radiation, there is also a slightly increased risk of stroke around the time of procedure. However, with most recent techniques, this risk has been significantly decreased.



Arteriogram demonstrates evidence of high grade stenosis of the internal carotid just beyond the bifurcation.

TREATMENT MODALITIES: CAROTID ENDARTERECTOMY

Carotid Endarterectomy (CEA) has been the gold standard in treatment of patients with high grade carotid stenosis and those patients with symptomatic carotid disease for quite some time. With constant advances in surgical technique and anesthesia in these high risk patients, the complication rate from procedure is around 1% in the appropriate hands. Most of these patients are discharged within 24 hours and can return to their usual routine in a relatively short time frame. **The purpose of this surgery is to prevent future strokes, and restore adequate cerebral perfusion.** In terms of anesthesia options, it can be performed under general anesthesia or with cervical block and intravenous sedation or cervical block and local anesthesia. The last method does allow for intra-operative neurologic assessment at the time of the procedure. In terms of other ways of providing adequate perfusion at time surgery include:

1. Intraoperative EEG monitoring/Selective Shunting
2. Routine Shunting
3. Transcranial Doppler Evaluation/Selective Shunting

Although it has the lowest perioperative stroke rate, there have been several arguments against the use of routine shunting. These include unnecessary use in 85% of patients and its associated morbidity, which may include atheromatous or air emboli, arterial dissection, and acute arterial occlusion. Several other complications have been reported including increased risk of local complications such as nerve injury, hematoma, infection and long term restenosis.

CASE STUDY



PELVIC CONGESTION SYNDROME IN A POST - MENOPAUSAL FEMALE

GAURAV LAKHANPAL, MD, FACC, RPVI

CLINICAL MANIFESTATIONS PCS

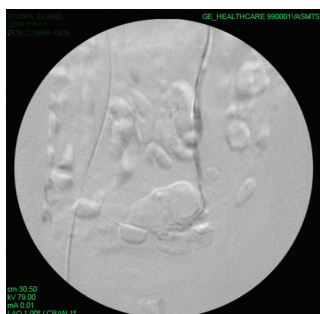
PCS is characterized by pelvic pain of at least six months duration. It often first manifests during or after a pregnancy, and worsens with subsequent pregnancies. The pain varies in severity, but is usually described as a dull ache or heaviness that increases around the menstrual cycle; with prolonged standing, postural changes, walking, or activities that increase intraabdominal pressure; and after intercourse (postcoital ache).

It is usually unilateral, but can be bilateral or shift from one side to the other. The patient may also complain of sharp exacerbations of pain, dysmenorrhea, deep dyspareunia, and urinary urgency. Gluteal, vulvar, and/or thigh varices may also be present.

It primarily affects multiparous women in the reproductive age group. The prevalence of PCS is up to 30 percent in patients presenting with chronic pelvic pain in whom no other obvious pathology can be found.



Before



After

CASE 1

77 year old female with Pelvic Congestion Syndrome

Chief Complaint:

Pain and pressure in pelvic/vaginal area x 1 year

Aggravating factors: Bowel movement

Relieving Factors: Pain medication

Patient denied any pelvic varicosities, dyspareunia or leg symptoms. No hemorrhoids.

PMHx: Hypertension well controlled with Atenolol and Amlodipine, GERD controlled with Famotidine

PSHx: Tonsillectomy and adenoidectomy, Cholecystectomy, Cataract removal and chest wall cyst removal.

Personal/Social Hx: Non-smoker, social alcohol consumption, no recreational drug use. Married, working as a hair dresser.

OB Hx: Gravida 3 Para 3.

Allergies: NKDA

Investigations:

Pelvic Venous Duplex Examination: No evidence of DVT bilaterally. Dilated left ovarian vein measuring 0.70 cm and > 3 second Reflux. Multiple dilated left sided periuterine veins with > 3 second reflux.

Transvaginal Ultrasound: Prominent adnexal vessels bilaterally.

Course of Treatment: By the time the patient presented to our office, she had had evaluations done by her Gynecologist, Urologist and Uro-gynecologist. Also had a GI evaluation done with Colonoscopy and polypectomy without relief of her symptoms.

IN THE NEWS



CVR LAUNCHED INAUGURAL NCVH MID-ATLANTIC MEETING

VINAY SATWAH, DO, FACOI, RPVI

The Center for Vascular Medicine had the honor of launching the inaugural NCVH Mid-Atlantic meeting in Bethesda, Maryland. The purpose of the meeting was to fulfill the need for a regional platform to promote the detection and treatment of peripheral vascular disease through a multi-specialty, team-oriented approach. As there are several talented clinical providers in the Mid-Atlantic area who are passionate about vascular disease, this meeting was envisioned to provide a forum for all to come together to share thoughts and ask questions to learn from each other. It was a fairly well-attended event of about 125 people which included nationally renowned vascular medicine experts, primary care providers, podiatrists, cardiologists, vascular surgeons, nurses, PAs, ultra-sonographers, and radiology technicians.

The meeting was organized into 3 sections: peripheral arterial disease, deep venous disease, and superficial venous disease. The event presented clinical vascular updates so that we can all stay abreast of the most up to date literature that we could take back to our respective practices to provide the best care for our patients. The faculty selection process was very easy since we have so many outstanding clinicians in the region. It was humbling to share the podium with these faculty members.

This meeting's message was that helping patients with peripheral vascular disease is a TEAM-oriented approach. The reality is that we cannot do it ALL ourselves. We must however do our part in helping raise the awareness and recognition of the disease process in the community.

**Next NCVH Meeting
to be held on April 1, 2017
at the Marriot in Bethesda
5151 Pooks Hill Road
Bethesda, MD 20814**

Call today to make a referral:

866-916-9202

www.cvmus.com



WELCOME DR. JESSICA "ZOE" ZARET, MD, FACOG

ZOE ZARET, MD

Dr. Zaret earned her undergraduate degree and M.D. at New York University. She completed her residency in OB/GYN in the rigorous Uniformed Services program at Walter Reed Army Medical Center (Washington, DC) and National Naval Medical Center (Bethesda, MD) in 2004. She was selected for additional subspecialty training in Reproductive Endocrinology and Infertility and completed this fellowship at the Jones Institute for Reproductive Medicine in Norfolk, VA in 2007. She is Board Certified in OB/GYN and board eligible in Reproductive Endocrinology.

Dr. Zaret went on to complete 13 years of military service, caring for patients at Walter Reed Army Medical Center and Fort Belvoir Community Hospital. Dr. Zaret has a special interest in evaluation and treatment of chronic pelvic pain and identifying those patients in whom vascular insufficiency and pelvic congestion syndrome are a significant cause.

Born in Seattle, Washington, Dr. Zaret is married and has three school-aged children. Her other interests include spoiling her beloved labradoodles, and challenging herself to step off the treadmill and participate in 5K and longer runs.

You are cordially invited to attend...

THINK VASCULAR

a clinical update on **peripheral vascular disease**
and advanced **treatment** options.

DATE: Wednesday, July 13, 2016

TIME: Registration at 6:00 pm
Presentation to start at 6:30 pm

LOCATION: Stoney's Kingfisher
14442 Solomon's Island Road, S
Solomon's Island, MD

CME EVENT
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IMMEDIATE APPOINTMENTS AVAILABLE

Annapolis – Fairfax – Glen Burnie – Greenbelt – Prince Frederick – Silver Spring