The Heart Matters
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all about heart
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Dr. Ashwin Paul Kooran
MBBS, MD Medicine, DM Cardiology
Consultant Interventional Cardiologist

Dr. Girish PV

Panel of Interventional Cardiology :
Dr. P.P. Mohammed Musthafa, Dr. Muhamed Shaloob, Dr. Arun Gopi , Dr. Girish PV, Dr. Amira Ali Shaik

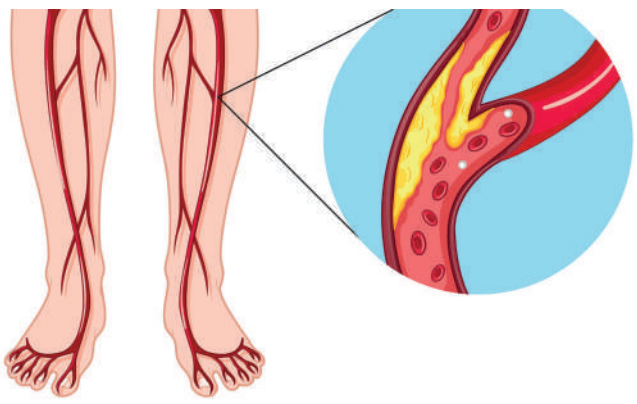
PERIPHERAL VASCULAR INTERVENTIONS TO AVOID LIMB LOSS

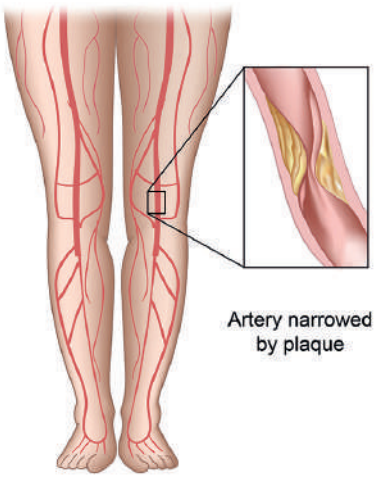
PERIPHERAL ARTERY DISEASE

Peripheral artery disease (PAD) refers to chronic narrowing of arteries of limbs due to atherosclerosis and represents a spectrum from asymptomatic disease to intermittent claudication (IC) and can progress to critical limb ischemia (CLI). PAD is known to be associated with a reduction in functional capacity and quality of life as well as an increased risk for myocardial infarction (MI), Stroke and death. It is a major cause of limb amputation. Therefore, the general goal of treatment for PAD are relief of symptoms, preservation of walking and functional status and prevention of amputation.

WHAT ARE THE RISK FACTORS FOR PAD?

. Atherosclerosis is the leading cause for PAD
Major risk factors for this includes;
. Diabetic mellitus
. High blood pressure
. Smoking
. High cholesterol
. Age above 60 years
. Obesity and sedentary life style





CLINICAL FEATURES OF PERIPHERAL ARTERY DISEASE

. Intermittent claudication
. Numbness or loss of sensation in the affected limb
. Pale or bluish skin colour
. Weak or absent pulses in the legs or feet.
. Shiny legs with loss of hair on legs
. Sores or wounds on the toes, feet or legs that won't heal.

DIAGNOSTIC TOOLS FOR PAD;

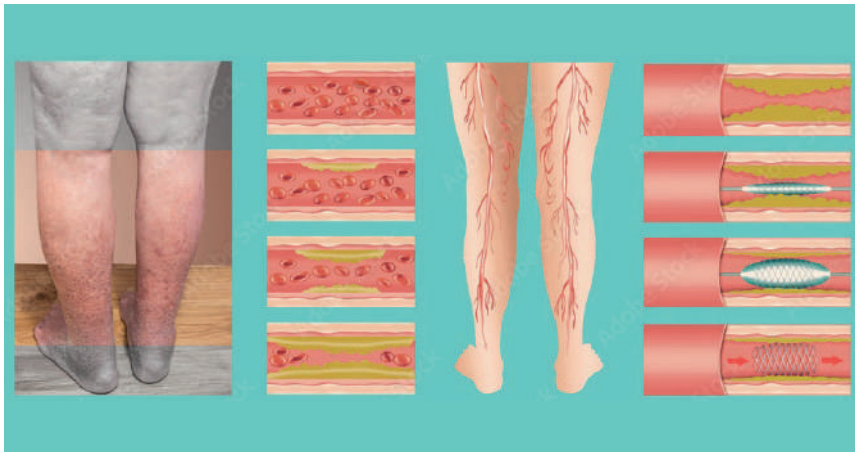
. Ankle brachial index determination
. Duplex ultrasonography
. Computed tomographic (CT) angiography
. Magnetic resonance angiography (MRA)
. Conventional Peripheral angiogram

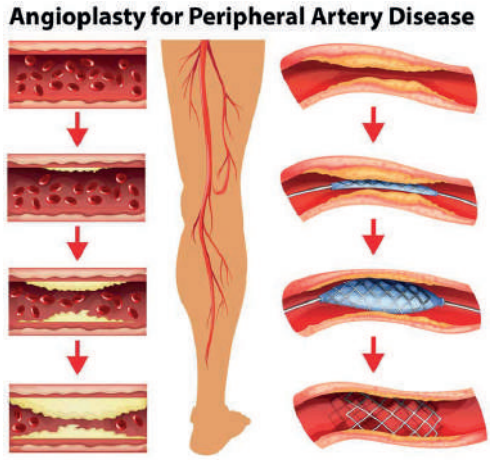
WHAT IS PERPHERAL ANGIOGRAM

The peripheral angiogram is a test that uses x- rays and contrast dye to help to find narrowed or blocked area in one or more of the arteries that supply blood to the legs, or arms and hands. The test is also called extremity angiography.

WHAT IS PERIPHERAL ANGIOPLASTY

Percutaneous transluminal angioplasty (PTA) refers to use of special guidewire and angioplasty balloon which are introduced into the artery of interest with help of a catheter, to open up critically blocked blood vessels. Angioplasty may be followed up by bare metal or drug eluting stent implantation. Latest developments include use of rotational atherectomy and use of intravascular lithotripsy to treat calcified blockages.





BASIC PROCEDURE DETAILS

In case of lower limb disease, the artery of interest can be approached by antegrade or retrograde approach by introducing a sheath. A guiding catheter is advanced over a guidewire up to the proximal portion of the lesion that is intended to be treated. A small calibre guidewire is advanced across the lesion (similar to guidewire used in coronary angioplasty). The lesion is dilated using special peripheral angioplasty balloons, sizing the balloons depending on the size of the vessel. Prolonged balloon dilatation is done and need for stent implantation is then assessed. Specialised stents are available for superficial femoral artery and popliteal artery. Balloon expandable and self-expanding stents are available to used according to vessel involved and length of lesion.

WHAT ARE THE TREATMENT OPTIONS FOR ACUTE LIMB ISCHEMIA?

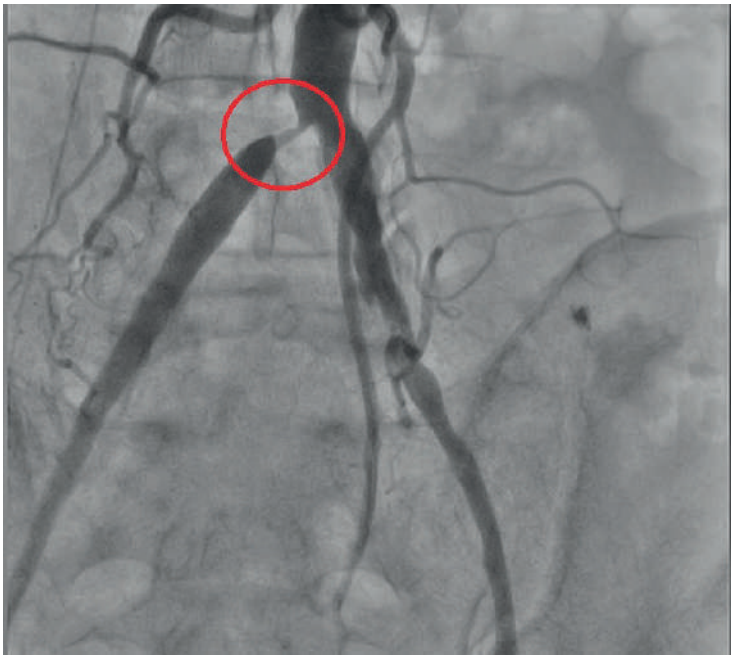
ALI refers to rapid decrease in blood flow to limb due to acute occlusion. It could be due to acute thrombosis or embolism. It is a medical emergency as delay as delay can lead to limb loss. Treatment options includes aspiration of thrombus and also catheter directed thrombolysis.
Specialised thrombus aspiration system is available for large volume thrombus aspiration. Intra lesional catheter directed thrombolysis is also done to lyse the thrombus. Alteplase is the preferred thrombolytic agent used, which is given as infusion over 12 to 24 hrs. Specialised catheter like Cragg – McNamara catheter is used to provide controlled infusion of the drug through multiple holes along the length of the catheter.

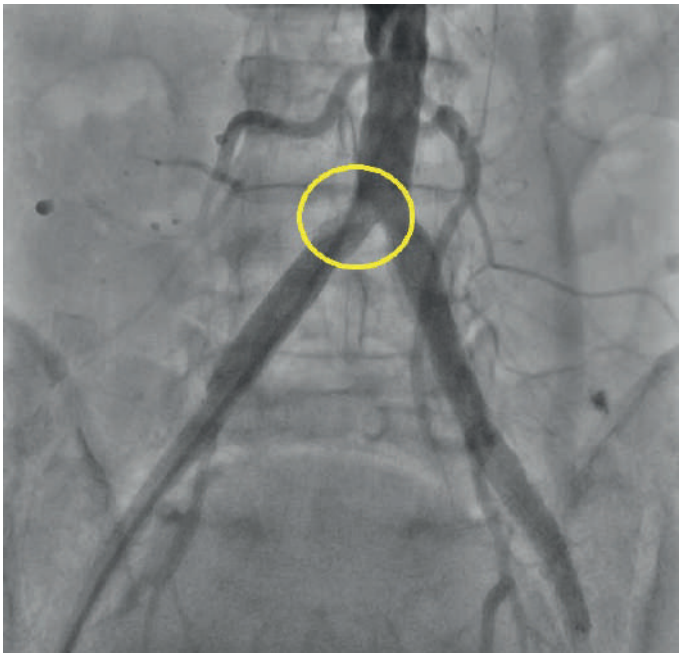
WHAT ARE THE MEDICINES THAT HAVE TO BE CONTINUED BY PATIENTS OF PAD?

Medical treatment is similar to patient with coronary artery disease. Antiplatelet and statins are the main line of treatment. Dual pathway inhibition is done by addition of low dose Rivaroxaban (2.5 mg BD) to the regular medicines. Post angioplasty patients require dual antiplatelet (aspirin and clopidogrel) is required for 6 months. Patients with thrombus or embolic acute limb ischemia will require newer oral anticoagulation. High dose statin is required in patient with PAD, to maintain ldl at 55 mg/dl. Adequate treatment of co morbidities and complete cessation of smoking is of outmost importance.

OUR CLINICAL EXPERIENCE

65-year-old male, presented with complaints of claudication pain non-healing wound left leg. Patient underwent peripheral angiogram through the right radial approach which showed B/L PVOD. He underwent successful PTA to right common iliac artery and left common iliac to external iliac artery through right and left femoral artery approach.





Right radial access was taken. Pigtail shot taken from aorta showed right common iliac artery ostial 90% stenosis and left iliac artery showed 80-90% stenosis with ulceration from proximal common iliac to external iliac. Right iliac lesion was crossed with 0.014 fielder FC wire with 4F Glide Cath support and exchanged into 0.035 extra stiff wire through right femoral access. And left iliac lesion was crossed with 0.014 fielder FC wire with 4F Glide Cath support and exchanged into 0.035 extra stiff wire through left femoral access. pre-dilation to right common iliac artery was done with 5.0x40mm Amphirion Deep Balloon at 8 atm pressure. Stenting was done with 9.0x47mm MYRA balloon expandable stent at 8 atm pressure from ostial to proximal common iliac artery (3mm into aorta) with confirming by taking multiple shot from JR catheter through left femoral access. Pre-dilation was done with 5.0x40mm Amohirion

deep balloon from left common iliac and iliac stenting was done with 8.0x80mm PROMESA self-expandable stent from proximal common iliac to external iliac artery. Post dilation was done with 9.0x60mm Amphirion deep balloon at 6 atm pressure to right common iliac and 8.0x60mm, Aphirion deep balloon at 6 atm pressure to left common and external iliac arteries. Check angiogram showed very good result and TIMI III flow.

FOLLOW UP

He was discharged on 3 rd day of the post procedure, and is following up clinically stable and functionally active 6 months post procedures on dual antiplatelets and statins.