



## LIVEDO RETICULARIS MASQUERADING AS PERIPHERAL VASCULAR DISEASE OF LOWER LIMBS

### Pharmacology

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### ABSTRACT

We report two cases of livedo reticularis masquerading as peripheral arterial disease (PAD).

In the first case report the patient has been followed up for 45 years. This patient presented with reticular discoloration of skin of lower limbs. Later on during the course the disease the patient developed hypoaesthesia of plantar aspect of right and left middle toe and also of plantar surface of left heel. The disease further progressed and the patient started experiencing pain in the calf muscles which started early on exertion esp. while playing. The second case is of a 44 years old, non diabetic male, smoking about 10 cigarettes/ day. He has been smoking for the last 16 years. He also reported of leg pain and had a large number of tiny lymphangiectasia papules and vesicles on his lower limbs.

### KEYWORDS

Livedo Reticularis, Peripheral Vascular Disease, Smoking

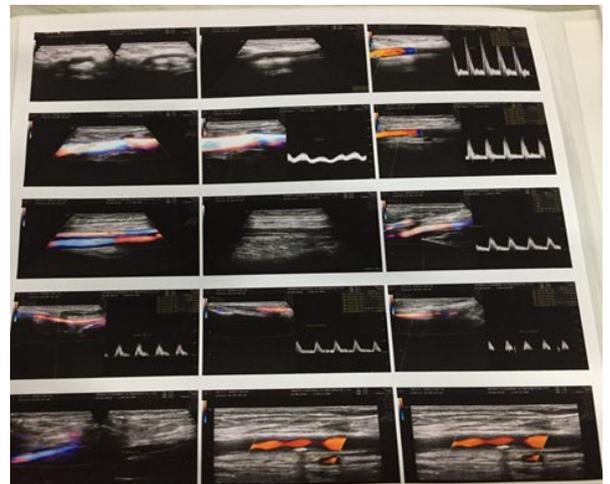
A lot has been written about peripheral vascular disease (PVD) of lower limbs. We will limit our discussion to the symptoms, associated diseases and treatment of livedo reticularis masquerading as PVD. Livedo reticularis is a purplish reticular discoloration of skin. It can be due to spasm of blood vessels especially during winter season, inflammation or vascular obstruction.<sup>[1]</sup> Though harmless, sometimes it could be a fore runner of serious and chronic diseases like lupus vulgaris<sup>[2]</sup>, rheumatoid arthritis, polyarteritis nodosa<sup>[1]</sup>, dermatomyositis<sup>[3]</sup>, infections (tuberculosis, syphilis), lymphoma<sup>[3]</sup> or as complication of kidney dialysis. Livedo reticularis can be due to different drugs<sup>[4]</sup> (intra arterial inj as in drug addicts) or conditions such as homocystinuria, Ehler Danlos syndrome, pheochromocytoma, primary hyperoxaluria, cytomegalovirus disease, Down's syndrome<sup>[5]</sup>, metastatic breast cancer and renal cell cancer<sup>[6]</sup>, Grave's hyperthyroidism, Burger's disease, pernicious anemia and silicon implants.

### Case report I

We report a case of peripheral arterial disease (PAD) which has been followed up for 45 years. We have not been able to find such a long follow up in a case of livedo reticularis landing to PVD.

A 20 year old male, first reported in 1972 with reticular discoloration of skin of lower limbs during the winter season. The patient did not give any history of any autoimmune disorder. There was no history of any drug intake or infectious diseases like syphilis, tuberculosis, Lyme's disease. The patient was not suffering from any disease of kidneys and had no hyperoxaluria. He did not report any hematological disorder as per the investigations available then. He was perfectly healthy and was able to walk for 5-6 km distance. The patient smoked about six cigarettes a day. A diagnosis of livedo reticularis without any other symptoms was made. In 1987, the patient started playing lawn tennis and is continuing with the sport till date. In the latter half of 2014, the patient started getting hypoaesthesia of plantar aspect of right middle toe and a few weeks later of left middle toe and then 1 ½ X 1 ½ area of hypoaesthesia on left heel plantar surface. It was misdiagnosed as radiculopathy by the neurophysician. We can assume that this was because of lack of blood supply to the nerve due to blockade of small blood vessels.

In latter half of 2016 (age 65), the patient started experiencing pain in the calf muscles. The pain started early on exertion esp. while playing. Various investigations relating to kidney, thyroid and blood were conducted and they turned out to be totally normal. The patient's fasting blood sugar was 128 mg% and he was diagnosed as prediabetic & HbA1c at 6.7%. A color Doppler was done for both the legs and it showed blockade in several arteries of the leg, as the report depicts.



### Bilateral Lower Limb Arterial and Venous Doppler

Mild atheromatous changes are seen in right lower limb arteries without significant stenosis. Left common femoral artery shows soft plaques in its walls of approximately 14mm length and 1.9 mm thickness without significant stenosis. Rest of the lower limb arteries namely superficial femoral artery, popliteal artery, anterior tibial artery, posterior tibial arteries show diffuse atheromatous changes and partial luminal narrowing. On color flow imaging and spectral analysis show normal color filling and normal triphasic flow pattern in left CFA. SFA, popliteal artery, ATA, PTA and DPA show biphasic flow pattern. Distal vessels show reduced velocities.

The patient was diagnosed as a case of peripheral vascular disease by cardiologist and vascular consultant and was put on statins, aspirin 75 mg and pentoxifylline 400mg three times a day. This treatment gave 90% relief. Pentoxifylline has not been available in India since the beginning of 2017. The patient was put on Clopidogrel 75mg and the patient started getting ventricular ectopics. The patient has a history of ventricular ectopics 4 years ago and was taking beta blockers for last 2 years.

Due to lack of procurement of medicine from USA frequently, now the patient is taking pentoxifylline when he is to play lawn tennis and keeps the leg warm. After playing he experiences slight pain in the legs which is manageable by keeping the legs warm and by massage. The pain is located in the posterior compartment of legs, which we think is because of posture and also interosseus plantar muscles while playing. Anterior compartment muscles are not affected.

Genetic studies have also been done from Bonfil Labs Colorado (USA). The genetic studies showed that the patient has tendency of

psoriasis (one cousin & his grandson have psoriasis), ankylosing spondylitis (one distant cousin got ankylosing spondylitis at age of 26 years), diabetes mellitus (many family members have diabetes mellitus). One of the siblings of the patient is suffering from acute myeloid leukemia. ANA and some other lab diagnosis turned out to be negative.

We personally feel that at least non invasive investigation should have been done at the age of 35 years especially since the patient is a smoker. Proper non invasive investigations should be done in all patients presenting with tiredness of legs, shiny skin of legs, Shambert's purpura, even stasis dermatitis. We have not been following this practice due to our ignorance or because of unaffordability of the patient. Lawrence E Gibson suggests that the patient must consult a doctor when he experiences any of the following:<sup>[7]</sup>

- Pain or discomfort accompanying livedo reticularis
- Painful nodules develop
- Ulcers develop on the affected skin

But we feel that by the time these symptoms develop it may be too late. Delaying the diagnosis will result in repeated consultation with the doctor.

### Case II

We, hereby report another case of peripheral arterial disease. This is a case of 44 years old non diabetic male smoking about 10 cigarettes/day. He has been smoking for the last 16 years. He reported of leg pain 2 years ago. He had no systemic disease as reported in the first case. As far as his family history is concerned his mother had diabetes and hypertension and one sister too is diabetic. The patient complained of edema of leg in the day which vanishes in the night by raising the foot end. His color Doppler study reads acute thrombosis of left sided femoral and popliteal vein and partial thrombosis of left anterior tibial and posterior tibial veins. He had a large number of tiny lymphangiectasia papules and vesicles for which he is mainly concerned.

**Discussion:** In the first case the process was very slow and in the latter case progress is too fast and that is why we suggest early check up and color Doppler in smokers or with other diseases at the age of 35 years and later once every two years. The involvement of left leg in both cases is coincidental or the reason is not explainable

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