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VARICOSE VEINS: A COMPREHENSIVE REVIEW

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ABSTRACT
Leg veins are the most prevalent locations for varicose veins, which are dilated, twisted, bulging veins in the legs brought on by superficial venous reflux. This is a component of a range of chronic venous diseases that significantly increase patient discomfort and the cost of medical care. A thorough history and a close inspection of the legs for vein distribution and skin abnormalities are part of the evaluation of individuals with venous illness. Varicose veins are a condition that affects the veins, particularly those in the legs, as a result of blood circulation turbulence and backward flow. Edema causes the veins to expand and become distorted. The condition of the varicose veins is made worse by the disease's numerous accompanying symptoms.

KEYWORDS: Chronic venous disease, Varicose veins, Deep vein thrombosis.

1. INTRODUCTION

A varicose vein is a "dilated, tortuous vein that often appears as bulging or twisted cords beneath the skin, usually blue or dark purple in the subcutaneous tissues of the leg[1,2] the term "varicose vein" comes from the Latin word "varix," which meaning twisted[2] varicose veins are quite frequent, affecting 40% of men and 32% of women between the ages of 18.[1,2,3]

In addition to being a cosmetic issue, varicose veins can significantly lower a person's quality of life.They may result in psychological turmoil, pain, and discomfort[1,4] they may also put people at risk for negative effects such venous insufficiency, thrombophlebitis, and venous ulcers.[1,17] occupations requiring extended standing have been linked to the development of varicose veins According to certain research, professionals who stand for long periods of time such as hair stylists, hospital employees, and especially nurses are more likely to develop varicose veins[4] a chronic venous problem is a clinical ailment that is mostly defined by vein wall weakening and is linked to venous reflux and valve dysfunction[2,5] usually found on the lower limbs, varicose veins are big, twisted, and twisted veins that widen when stimulated[6] The illness known as chronic venous insufficiency (CVI) of the lower limb encompasses all of the symptoms that arise from ongoing venous hypertension.[2,5]

2. DEFINATION

Varicose veins are abnormally dilated, elongated, and tortuous veins that typically affect the superficial veins of the lower extremities. They are caused by the incompetence of venous valves, which results in impaired blood flow and venous pooling.

3. Epidemiology

The Study looked at the epidemiology of varicose veins in 3,822 people[13] the results show that, although there are no discernible age differences, women are more likely than males to have varicose veins[13] women with varicose veins[13] were older at menopause had higher-systolic blood pressure were less physically active and were more likely to be obese than women without varicose veins. and older at menopause as well as having higher systolic blood pressure.The incidence of varicose veins was considerably greater in women who reported engaging in sedentary activities (standing or sitting) for eight or more hours on average per day than in those who reported engaging in these activities for four or fewer

hours Varicose veins were associated with higher smoking rates and lower levels of physical activity in men.

Although atherosclerotic cardiovascular disease was more common in both men and women with varicose veins than in those without, only the increased risk of coronary heart disease in women was statistically significant After adjusting for systolic blood pressure and body mass,this finding was not significant[13] these findings imply that weight management and increased physical exercise may assist persons at high risk avoid varicose veins and lower their overall risk of atherosclerotic cardiovascular disease.[4,13]

4. Physiology

The foot and calf muscle pumps are the main sources of venous return against gravity[5,8] Pressure on the sole of the foot, and muscular contraction (systole) in the fascial compartments of the calf compresses the sinusoidal intramuscular veins directing blood into the deep system and thence up the leg[5] blood from the surface tissues is collected by superficial veins, and as muscles relax (diastole), the blood travels down a pressure gradient through the perforating veins and into the deep system, filling the sinuses[5,10] When muscles relax, valves close to prevent reverse flow, or reflux[5,19] these are small but robust bicuspid leaflets located at the base of a vein's localized dilated sinus.[8]

The inferior vena cava (IVC) often have no valves at all, and the density of valves in both superficial and deep systems is highest in the calf and gradually decreases up the lower leg[5] venules have valves as small as 0.15 mm in diameter[10] junctional and non-functional perforators close during systole to stop blood from returning to the superficial system.

Initially, it was believed that this only happened when valves closed, but multiple studies have failed to show that has such valves. Rather, it is believed that external pressure from the muscle and fascia that the perforators travel through is what limits outward blood flow; this is comparable to the "pinch-cock" process that stops reflux at the gastro-oesophageal junction. Crucially, this also shields the epidermis, subcutaneous tissues, and superficial veins from the exceptionally high deep venous pressures (up to 250 mm-Hg) produced by the calf muscle pump during systole.As blood continues to enter the veins from the arterial side while standing still and the venous valves[5,8] are in the neutral position, the pressure in the foot veins progressively rises. When one venous segment's pressure rises over that of the segment immediately above, the valve opens In a person of average height, the hydrostatic pressure in the foot's veins eventually reaches 90 mm-Hg, which is the pressure created by an intact column that runs from the foot to the right atrium[5,19] active movement causes the compression of deep veins and sinuses, which raises venous pressure and moves blood cranially and initially caudally.

5. Pathophysiology

Venous valve-related ambulatory venous hypertension is the primary pathophysiological cause of the clinical presentation of CVI in the lower extremities[2,14] blockage of venous flow, re-flux, or both[2] when the foot vein is stationary and there is no skeletal muscle contraction, the venous pressure can reach 80 to 90 mm-Hg[5,19] when the foot vein is stationary and there is no skeletal muscle contraction, the venous pressure can reach 80 to 90 mm-Hg. During walking, this pressure drops to less than 30 mm-Hg in a person with functioning venous valves[5] leg motions do, however, lessen the drop in venous pressure in a patient with CVI The high pressures created in the deep veins by calf muscle contraction may be transferred to the superficial system and the skin's micro-circulation if the perforator veins' valves are ineffective. We refer to this as ambulatory venous hypertension. Following deep vein thrombosis, post thrombotic syndrome also results in valvular re-flux because of valve damage and venous hypertension[2,14] because of the residual blockage of venous flow.[1]

6. RISK FACTORS

The primary risk factors that lead to varicose vein formation[4,6,12,13]

A. Age
B. Gender
C. Genetics
D. Extended standing
E. Changes in hormones
F. Being overweight

7. TYPES OF VARICOSE VEINS

To recognize the issue and select the best therapy, it is crucial to comprehend the different forms of varicose veins[3,7] here is a thorough examination of the most prevalent kind.

A. Varicose veins on the trunk: There are noticeable bulges on the skin's surface due to large, inflated veins. Common symptoms include significant swelling, leg heaviness, and pain. The legs, particularly the thighs and calves, are frequently affected.[15,16]

Fig. 1: Trunk.

B. Varicose veins in the reticular: Appearance: Trunk varicose veins are more noticeable than smaller, blue or greenish veins. Symptoms include little soreness, itching,

or aching in the afflicted area. Thighs or the back of the knees are frequently affected. Treatment Options to effectively cure these veins, sclerotherapy or laser treatment are frequently utilized.[7,16]

Fig 2: Reticular veins.

C. spider veins: Red or purple, thin veins that resemble webs and are near the skin's surface. Symptoms Usually painless, but occasionally itchy or burning. The face, chest, and legs are frequently affected. Treatment Options: These veins can be successfully treated with non invasive procedures like laser therapy or sclerotherapy.[3,12,16]

Fig. 3: Spider Vein.

D. Varicose veins of the pelvic:- Women often have enlarged veins in the pelvic area. Symptoms include persistent pelvic pain, discomfort, or heaviness, especially during pregnancy or menstruation the pelvis, vagina, and even the thighs are frequently affected areas. instances, surgery or pelvic embolization may be necessary.[22]

Fig. 4: Varicose veins on pelvic area.

E. Varicoceles: Male scrotal veins that are enlarged and frequently associated with reproductive problems. Symptoms include scrotal enlargement, dull soreness, or a heavy feeling. Options for Treatment: Embolization or varicocelectomy (surgical repair) are two possible treatments.[22]

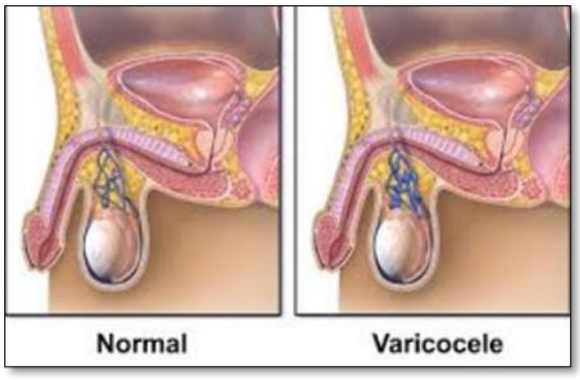

Fig. 5: varicose veins on varicoceles.

8. CAUSES OF VARICOSE VEINS

Varicose veins may have a primary, secondary, or hereditary origin.[14,17]

A) The main vein varicosities.
B) The second Varicose Veins.
C) Congenital and Familial varicose.[7,22]

9. Treatment

A) Exercise[5]
B) Treatment with compression[18]

C) Treatment without surgery:- Sclerotherapy.[7] Laser treatment,[16] Ultrasound aided foam sclerotherapy,[16] Ablation of endotherms.[15,16]

D) Surgery[7,22]:- Removal of veins, Phlebectomy ambulatory.

E) Natural treatment:-Extract from horse chestnut seeds, Gotu kola, Vinegar made from apple cider, Broom for butchers, Garlic, Tomato, Grape seed, Citrus Fruit, Citrus Fruit, Ginger.

10. Complications

A) Varicose bleeding.
B) Varipholebitis.[1,17]

11. Diagnosis and Assessment

- Doppler Ultrasound.
- Venography.
- Ankle-brachial index.

12. CONCLUSION

Patients with varicose veins typically require a variety of intricate therapies, both non-surgical and surgical, which entail a number of challenging procedures and additional difficulties[7,22] despite the doctors strong recommendations,these approaches have considerable disadvantages. If appropriate care is not received, the

disease's symptoms may occasionally return[15,16] this article's goal is to dissect the clinical presentation that may be more useful in determining the origin of varicose veins and other current therapies. There is a great deal of room for study in this area to develop these different therapies in the form of different dosage forms and prescribed dosages.

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