

STANDARD TREATMENT WORKFLOW (STW)

IMAGE GUIDED MANAGEMENT OF VARICOSE VEINS (CHRONIC VENOUS INSUFFICIENCY)

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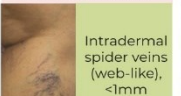
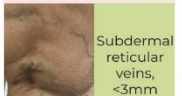

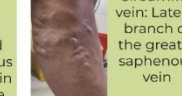
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Department of Health Research
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Standard Treatment Workflow (STW) IMAGE GUIDED MANAGEMENT OF VARICOSE VEINS (CHRONIC VENOUS INSUFFICIENCY) ICD-10-I83. 89

SYMPTOMS		CLINICAL PRESENTATION	
<ul style="list-style-type: none">Heaviness/tiredness/aching of the legsItching in legsNocturnal cramps in calfSwelling around ankleSymptoms worsened after prolonged standingSkin discoloration near the anklesAbnormal dilated veins in legBleeding from varicosities in legNon healing leg ulcer		SIGNS (CEAP- CLASSIFICATION) C1: Telangiectasias or reticular veins C2: Varicose veins C3: Edema C4a: Pigmentation or eczema C4b: Lipodermatosclerosis or atrophie blanche C5: Healed venous ulcer C6: Active venous ulcer	
RED FLAGS <ul style="list-style-type: none">Bleeding from superficial veinsVenous ulcerRecurrent history of superficial vein thrombophlebitis /Cellulitis			
CEAP- Classification C1		CEAP- CLASSIFICATION C2	
TELANGIECTASIAS Intradermal spider veins (web-like), <1mm	RETICULAR VEINS Subdermal reticular veins, <3mm	Great Saphenous vein with pronounced chronic venous insufficiency in medial ankle	Circumflex vein: Lateral branch of the greater saphenous vein
			
			Small saphenous vein varicosis



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CEAP- Classification C1		CEAP- CLASSIFICATION C2	
TELANGIECTASIAS	RETICULAR VEINS	Great Saphenous vein with pronounced chronic venous insufficiency in medial ankle area	Circumflex vein: Lateral branch of the greater saphenous vein
 Intradermal spider veins (web-like), <1mm	 Subdermal reticular veins, <3mm	 Small saphenous vein varicosis	

INVESTIGATIONS	
<p>ESSENTIAL</p> <p>Imaging → USG color doppler</p> <p>Hematological useful for prior to ablation → CBC, PT/INR, APTT, HBs Ag, HIV, KFT, HCV</p>	<p>USG COLOR DOPPLER</p> <ul style="list-style-type: none"> Rule out DVT/Deep vein reflux Doppler evaluation in standing Define and grade reflux at SFJ/SFJ Identify segmental intrinsic reflux in GSV/SSV Locate incompetent/pathological perforators Diameter of GSV Evaluate truncal and superficial vein varicosities and dilated tributaries
<ul style="list-style-type: none"> Incompetent SFJ - retrograde reflux venous flow lasting more than 0.5 sec Abnormal GSV - > 4 mm on standing Incompetent perforator - > 3.5 mm/ reflux on release of distal compression 	

ALGORITHM FOR DIAGNOSIS, REFERRAL AND MANAGEMENT

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                    graph TD
                    A[PHC Signs and symptoms of varicose veins] --> B[Refer to higher centre]
                    B --> C[CHC/DISTRICT HOSPITAL  
- Clinical examination,  
- USG Color Doppler  
- Exclude DVT/Deep vein reflux]
                    C --> D[In appropriate imaging setting]
                    D --> E[TERTIARY CARE  
- Clinical examination,  
- USG color doppler  
- Endovenous thermal ablation  
- Adjuvant medical management]
                    F[Symptomatic patient with Red flag sign (Bleeding, Venous ulcer)] --> E
                    
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MANAGEMENT	
<p>MEDICAL/ CONSERVATIVE</p> <ul style="list-style-type: none"> Mostly adjuvant to endovenous thermal ablation. Life style modification Graded compression stockings Limb elevation, Limb massage, calf pumping exercise Micronized purified flavonoid fraction (MPFF) Wound care – Unna boots, hydrocolloid dressing, silver coated dressing 	<p>SURGICAL</p> <ul style="list-style-type: none"> Limited role Subfascial Endoscopic Perforator Surgery Phlebectomy
<p>IMAGE GUIDED THERAPY</p> <ul style="list-style-type: none"> Primary modality of treating varicose veins Percutaneous endovenous Thermal Ablation Therapy: laser/RFA Percutaneous endovenous Non-thermal Ablation Therapy: MOCA/Glue/ catheter guided sclerotherapy Percutaneous ablation of Perforators – Laser/RFA Percutaneous Guided Sclerotherapy . 	

CONTRAINDICATION

- Absolute contraindication-
 - Reflux in deep veins
- Relative contraindications-
 - Severe peripheral artery disease
 - Severe hypercoagulability syndromes
 - Advanced liver disease
 - Serious systemic disease

MANAGEMENT ALGORITHM: VARICOSE VEINS

C1-C2 GRADE VARICOSE VEINS	C3-C6 GRADE VARICOSE VEINS
<p>USG COLOR DOPPLER</p> <ul style="list-style-type: none"> Competent SFJ Mild reflux grade I <p>Medical Management/ Conservative treatment</p>	<p>USG COLOR DOPPLER</p> <ul style="list-style-type: none"> Grade II/III/IV reflux Saphenous incompetence <p>Endovenous thermal/ Non-thermal ablation</p>
<p>USG COLOR DOPPLER</p> <ul style="list-style-type: none"> Grade II/III/IV reflux Saphenous/ Tributary incompetence <p>Endovenous thermal/ non-thermal ablation plus management of perforator, Sclerotherapy, phlebectomy whenever needed</p>	

VARICOSE VEINS: IR MANAGEMENT

Procedural details:

- Performed in IR suite
- Under conscious sedation or spinal anaesthesia or local anaesthesia
- Sterile precautions
- Percutaneous GSV access
- Perivascular anaesthesia
- Thermal ablation about 2 cm from SFJ junction
- Management of pathological perforator, SSV, accessory GSV, tributaries and superficial vein as and when required

RECOMMENDATION

- For treatment of GSV reflux in patient with symptoms and sign of chronic venous disease endovenous thermal ablation technique is recommended in preference to surgery and foam sclerotherapy
- For treatment of SSV reflux in patient with symptoms and sign of chronic venous disease endovenous thermal ablation technique should be considered. Access to SSV should be gained no lower than midcalf
- Foam sclerotherapy should be considered as primary treatment in patient with recurrent varicose veins
- When performing endovenous thermal ablation for saphenous reflux trunk, adding concomitant phlebectomy should be considered

MANAGEMENT OF RED FLAG SIGN

Bleeding from superficial varicose veins: Leg elevation higher than the heart. Application of pressure over the bleeding site followed by a pressure dressing

Referred to tertiary centre for endovenous ablation treatment

VENOUS ULCER

- Wound care/Dressing
- Compression Therapy
- Leg elevation

Referred to tertiary centre for endovenous ablation treatment

ABBREVIATIONS		
<p>APTT: Activated Partial Thromboplastin Time</p> <p>CTV: Computed Tomography Venography</p> <p>DVT: Deep Vein Thrombosis</p> <p>GSV: Great Saphenous Vein</p> <p>Hb: Haemoglobin</p> <p>HCV: Hepatitis C Virus</p>	<p>INR: International Normalized Ratio</p> <p>IR: Interventional Radiology</p> <p>KFT: Kidney Function Test</p> <p>MOCA: Mechanical Occlusion Chemically Assisted Ablation</p> <p>MRV: Magnetic Resonance Venography</p>	<p>PT: Prothrombin Time</p> <p>RFA: Radio-frequency Ablation</p> <p>SFJ: Sapheno-popliteal Junction</p> <p>SFJ: Sapheno-Femoral Junction</p> <p>SSV: Short Saphenous Vein</p> <p>USG: ULTrasonography</p>

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