

Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Isolated Incompetence	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent	Competent	Widely Patent	Competent
Superficial Veins				
Saphenofemoral Junction	Widely Patent	Incompetent	Widely Patent	Incompetent
L Saphenous Vein Above	Widely Patent	Incompetent	Widely Patent	Incompetent
L Saphenous Vein Below	Widely Patent	Isolated Incompetence	Widely Patent	Isolated Incompetence
Vein of Giacomini	Widely Patent	Competent	Widely Patent	Competent
Saphenopopliteal Junction	Not Identified		Not Identified	
S Saphenous Vein	Widely Patent	Competent	Widely Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT, with the exception of the right popliteal vein which appears widely patent and slightly incompetent.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent and linear in

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the thigh.

Incompetent branch noted proximally (34cm) forming tortuous medial calf varicosities that track distally and anteriorly. Distal to this the LSV is incompetent to the mid calf. Highly tortuous LSV region noted from 26-21cm which is patent and incompetent. Incompetent branch noted mid calf (19cm) forming medial calf varicosities. Distal to this the LSV is competent to the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Incompetent branch noted mid calf (18cm) which communicates with medial calf varicosities.

Transverse (AP) dimensions of thigh LSV: Proximal thigh - 1.06cm, Mid- thigh - 0.95cm, Distal thigh - 1.07cm.

Transverse (AP) dimensions of calf LSV: Proximal calf - 1.03cm, Mid - calf - 0.40cm, Distal calf - 0.49cm

LEFT

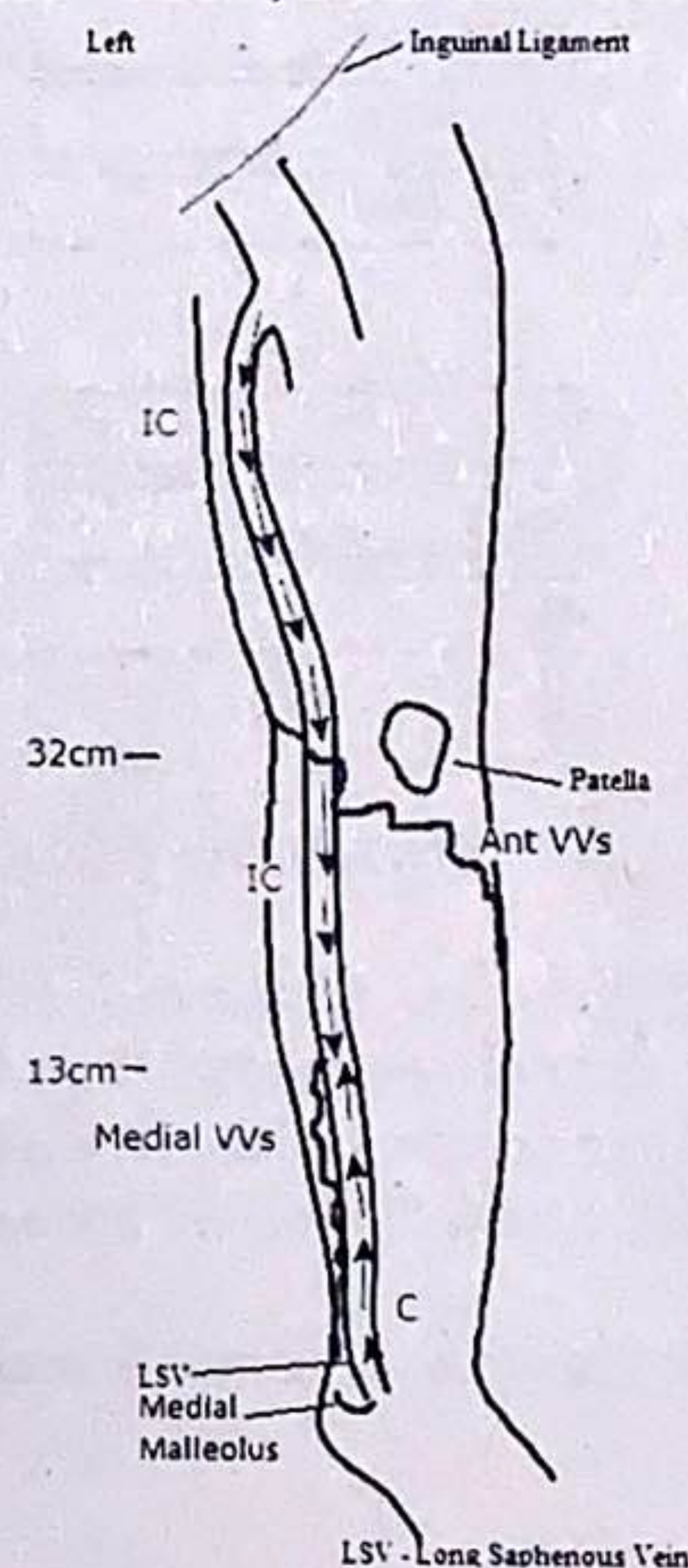
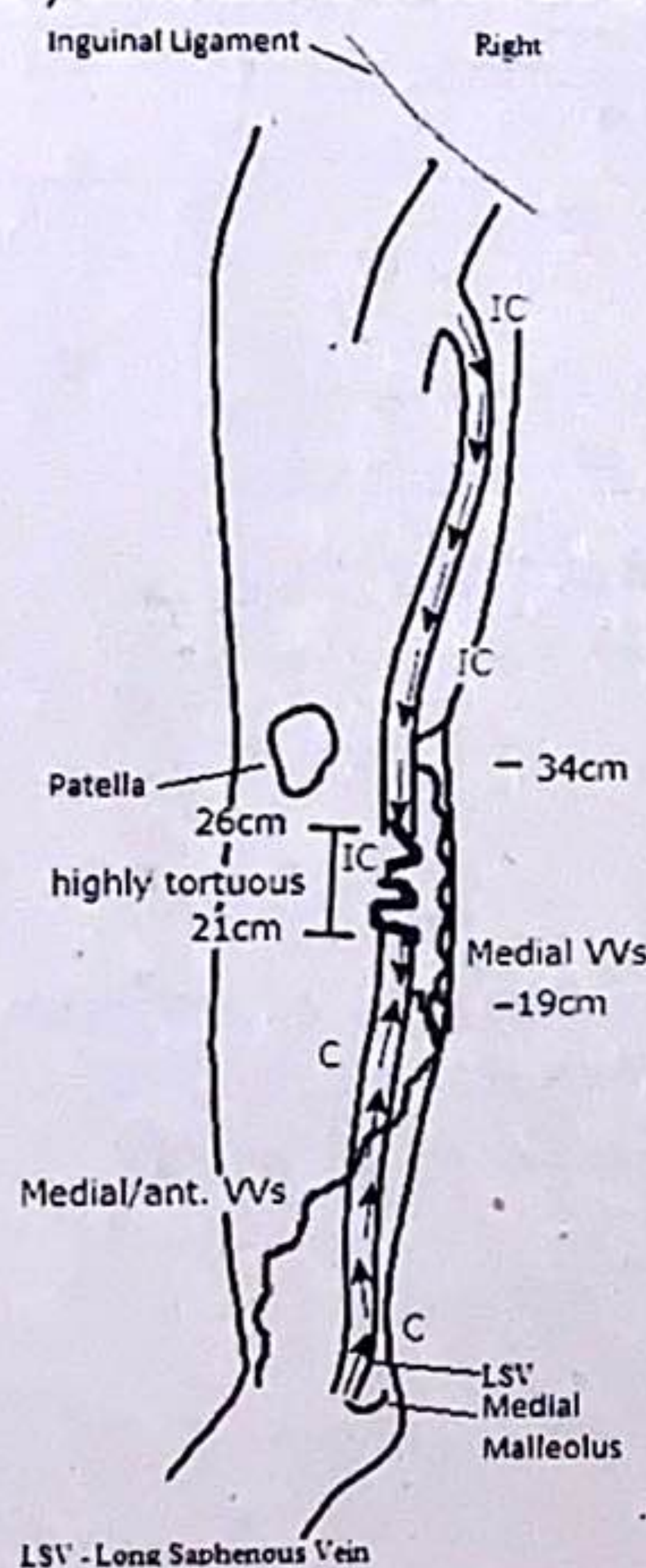
Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent and linear in the thigh.

Incompetent branch noted proximal calf (32cm) forming visible anterior varicosities. Distal to this the LSV is incompetent to the mid calf. Incompetent branch noted mid calf (13cm) forming medial calf varicosities. Distal to this the LSV is competent to the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of thigh LSV: Proximal thigh - 1.2cm, Mid- thigh - 1.29cm, Distal thigh - 1.11cm.

Transverse (AP) dimensions of calf LSV: Proximal calf - 1.14cm, Mid - calf - 0.93m, Distal calf - 0.64cm



Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
	Patency	Competency	Patency	Competency
Deep Veins				
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent		Widely Patent	
Superficial Veins				
Saphenofemoral Junction	Patent	?neovascularisation	Not Identified	see notes
L Saphenous Vein Above	Not Identified	see notes	Not Identified	see notes
L Saphenous Vein Below	Patent	Competent	Not Identified	see notes
Vein of Giacomini	Patent	Competent	Not Identified	
Saphenopopliteal Junction	Patent	Incompetent	Not Identified	
S Saphenous Vein	Patent	Incompetent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) appears highly tortuous ?competency ?neovascularisation. Incompetent branch forming incompetent anterior thigh vein noted proximally (55cm) tracking anteriorly over the knee,

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forming visible anterior varicosities. The LSV was not identified mid-distal thigh ?due to previous surgery. Vessel appears to reform proximal calf (29cm) and appears patent and competent to the mid calf, becoming small calibre distally ?native vessel.

Sapheno-popliteal junction (SPJ) appears patent and incompetent.

Short Saphenous vein (SSV) is patent and incompetent proximally. Incompetent branch noted proximally (24cm) forming posterior calf varicosities. SSV remains incompetent to distal calf. Incompetent branch noted distal calf (7cm) forming medial calf varicosities. Distal to this the SSV appears patent and competent.

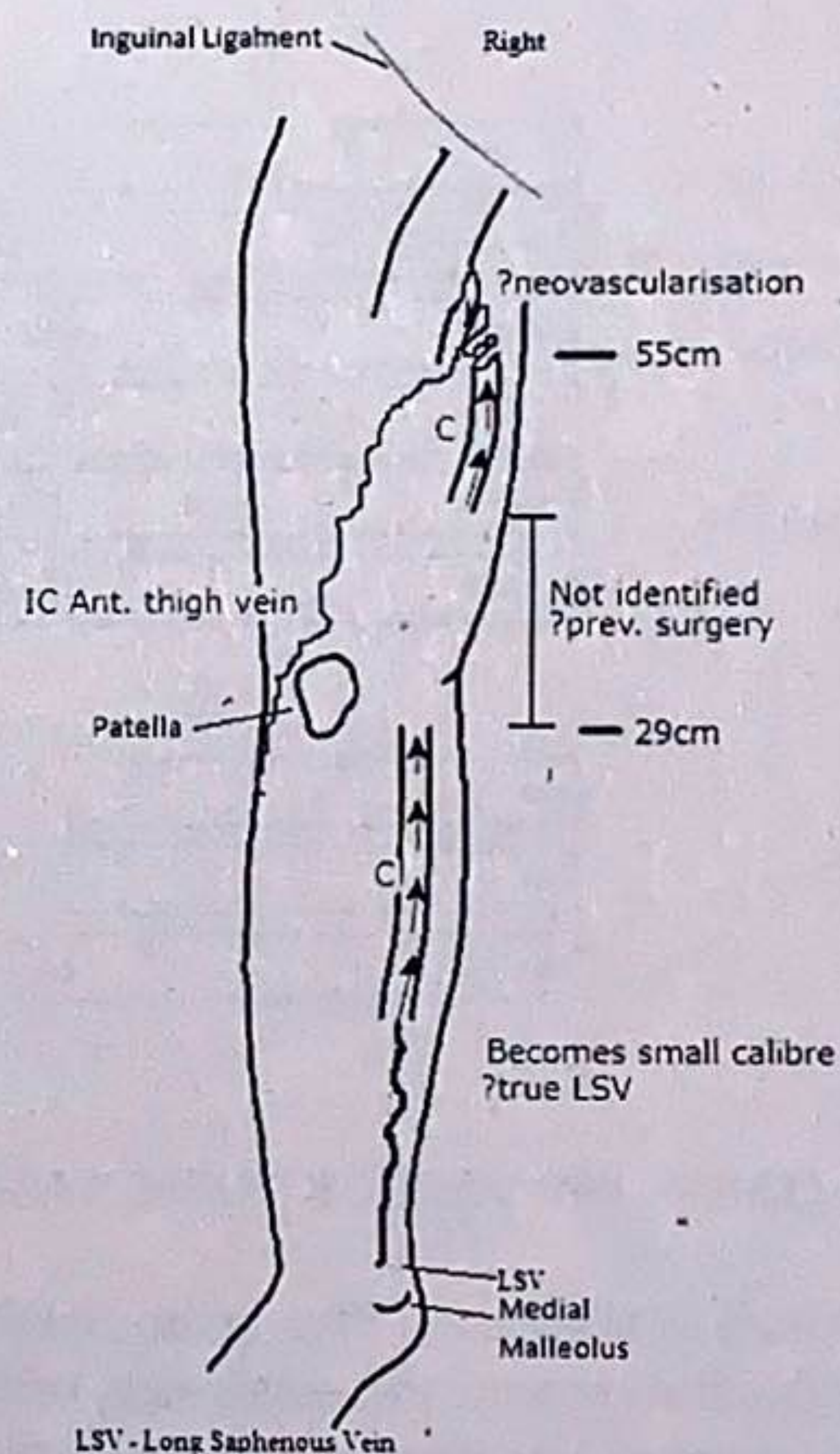
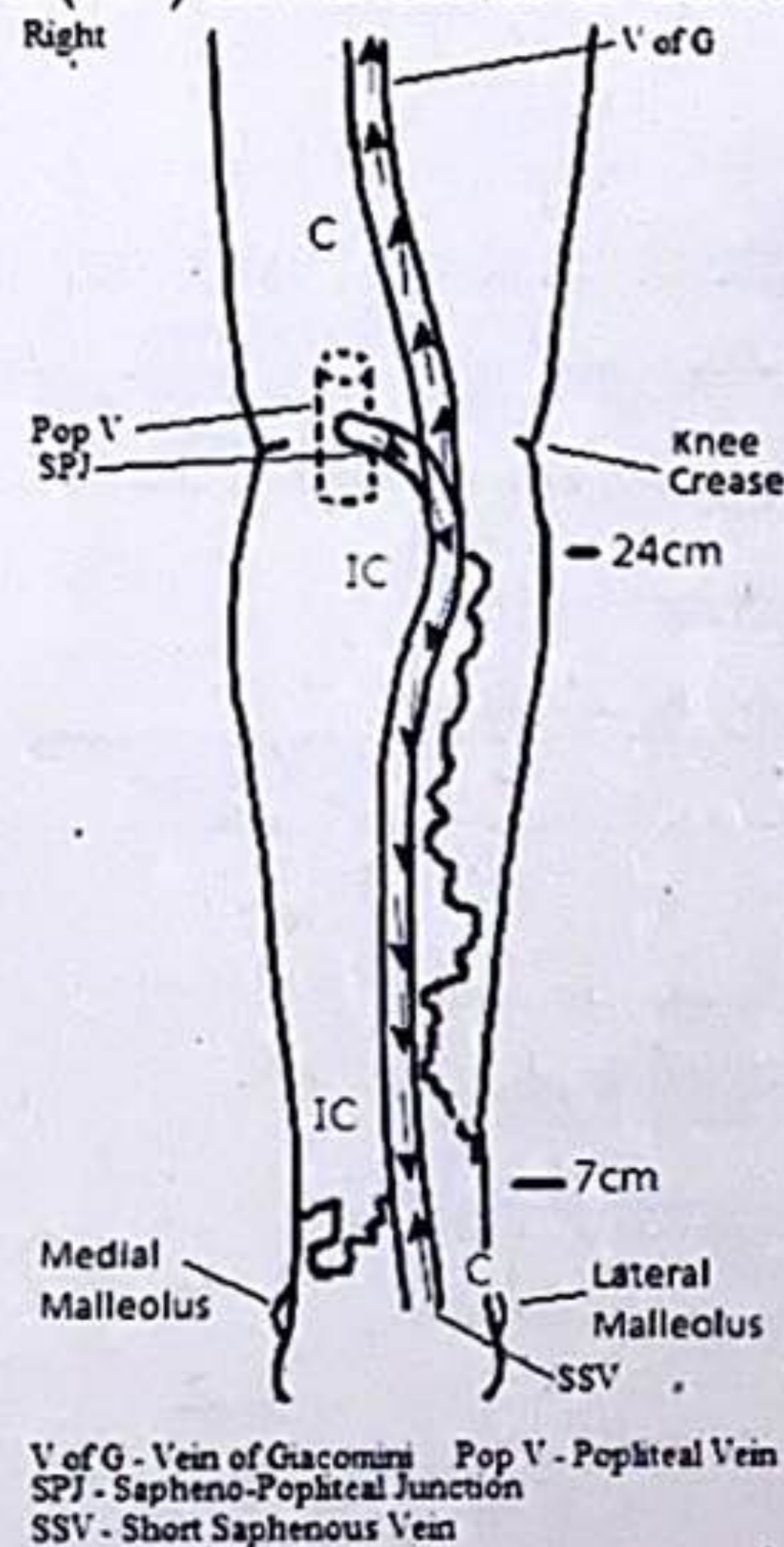
Transverse (AP) dimensions of LSV: Distal thigh - 0.22cm.

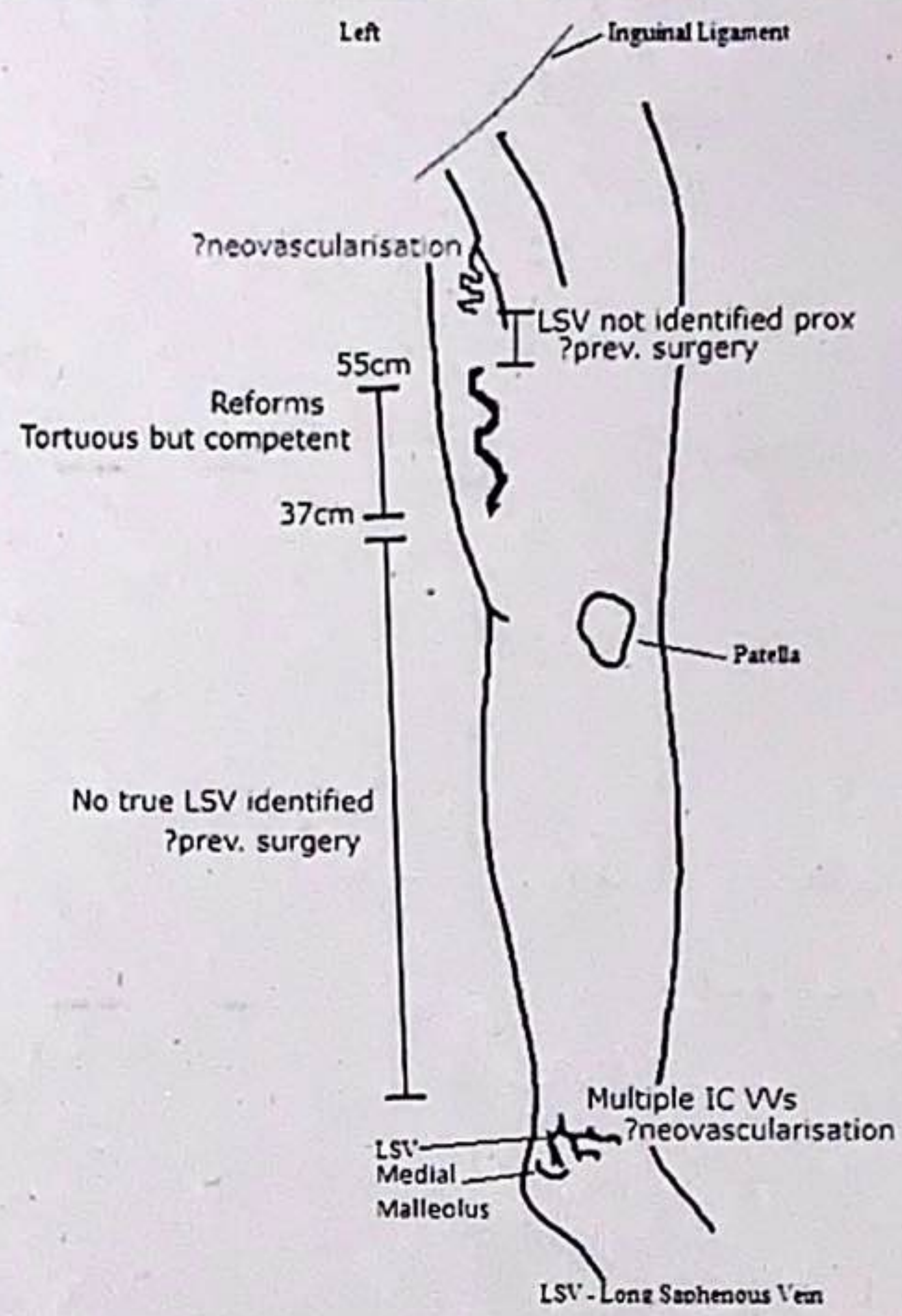
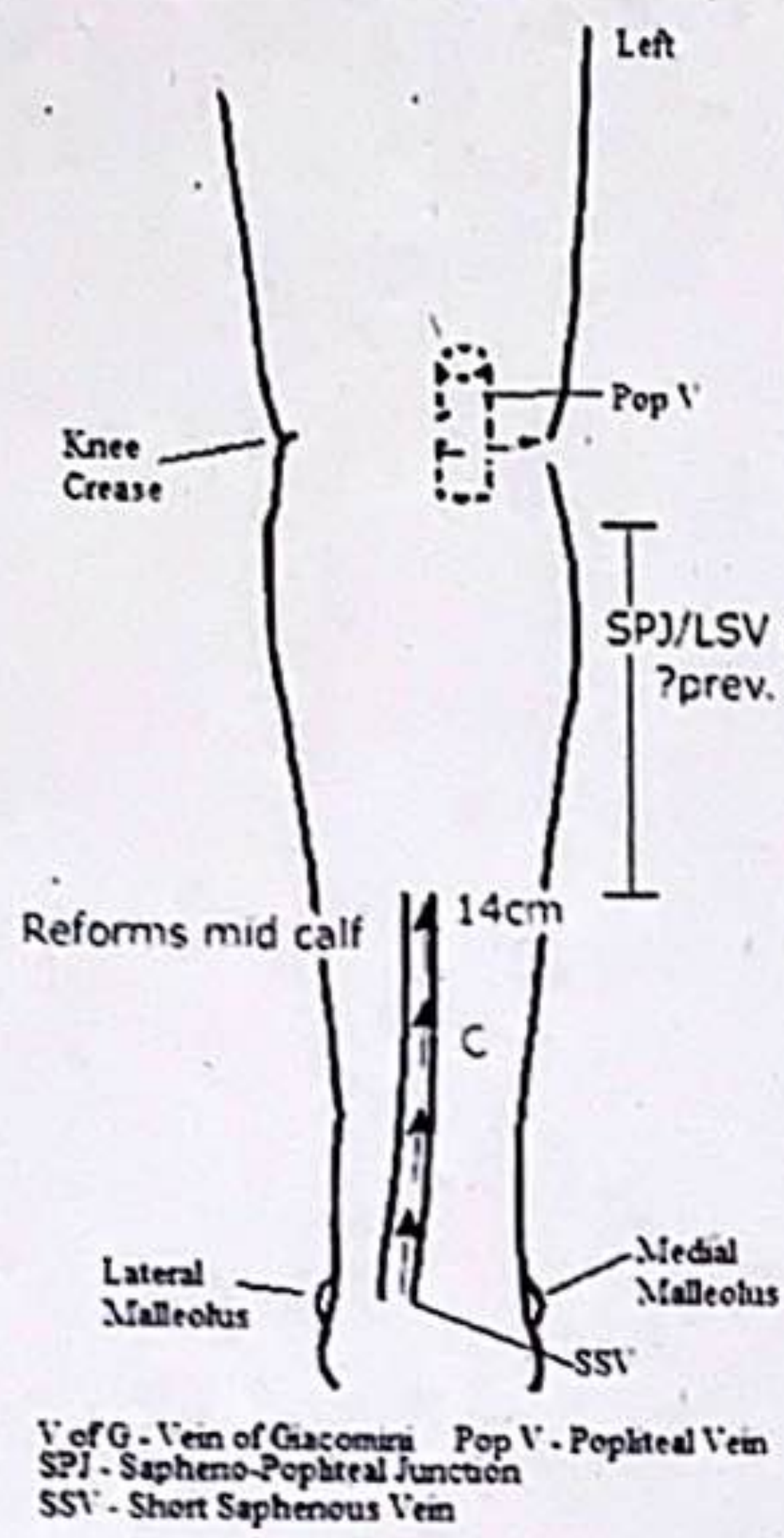
Transverse (AP) dimensions of SSV: Proximal calf - 0.29cm.

LEFT

Sapheno-femoral junction (SFJ) appears highly tortuous ?competency ?neovascularisation. No true proximal LSV identified in the thigh. LSV appears to reform mid thigh (55cm) forming slightly tortuous and competent vessel to the distal thigh. No true LSV identified distal thigh (37cm) to the ankle ?due to previous surgery. Multiple incompetent and highly tortuous varicosities noted distal calf ?neovascularisation. Sapheno-popliteal junction (SPJ) and proximal SSV was not identified ?small calibre vessel. Vessel appears to reform mid calf (14cm) and appears patent and competent to the ankle.

Transverse (AP) dimensions of LSV: mid thigh - 0.41cm.





Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed			
External Iliac Vein	Not Assessed			
Internal Iliac Vein	Not Assessed			
Common Femoral Vein	Widely Patent	Competent		
Profunda Vein	Widely Patent	Competent		
Superficial Femoral Vein	Widely Patent	Competent		
Popliteal Vein	Widely Patent	Isolated Incompetence		
Posterior Tibial Vein	Widely Patent	Competent		
Anterior Tibial Vein	Widely Patent	Competent		
Peroneal Vein	Widely Patent	Competent		
Soleal Vein	Widely Patent			
Gastrocnemius	Widely Patent	1 x Incompetent		
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent		
L Saphenous Vein Above	Patent	Incompetent		
L Saphenous Vein Below	Patent	Isolated Incompetence		
Vein of Giacomini	Patent	Competent		
Saphenopopliteal Junction	Patent	Incompetent		
S Saphenous Vein	Patent	Isolated Incompetence		
Evidence of D.V.T.				
Above the knee	No			
Popliteal	No			
Below the knee	No			

Notes

RIGHT LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. Isolated incompetence noted proximal popliteal vein and in 1 x gastrocnemius vein. All other deep veins appear widely patent and competent.

All measurements are proximal to the medial malleolus unless otherwise stated.

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent in the thigh and proximal calf. Incompetent branch noted at level of knee crease (35cm from MM) forming visible medial calf varicosities. Further incompetent branch noted mid calf (21cm from MM) forming medial calf varicosities. The LSV is patent and competent distal to this branch.

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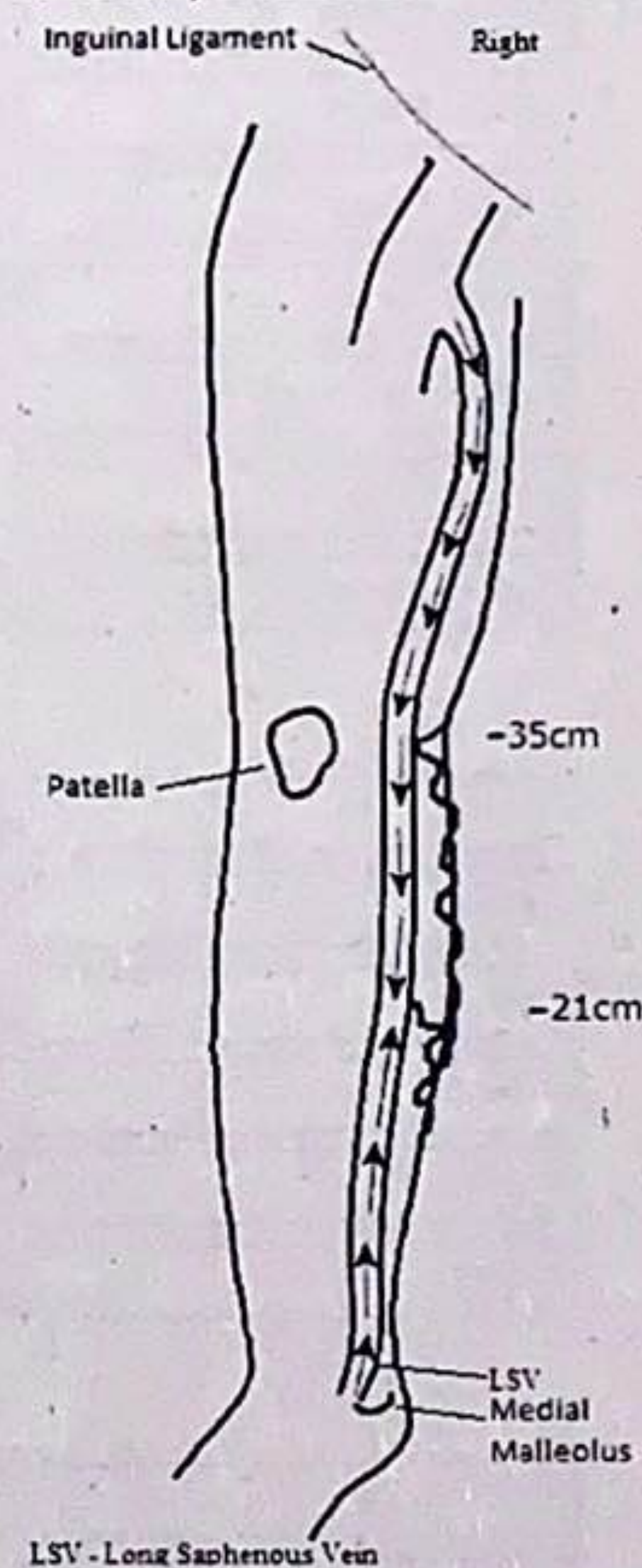
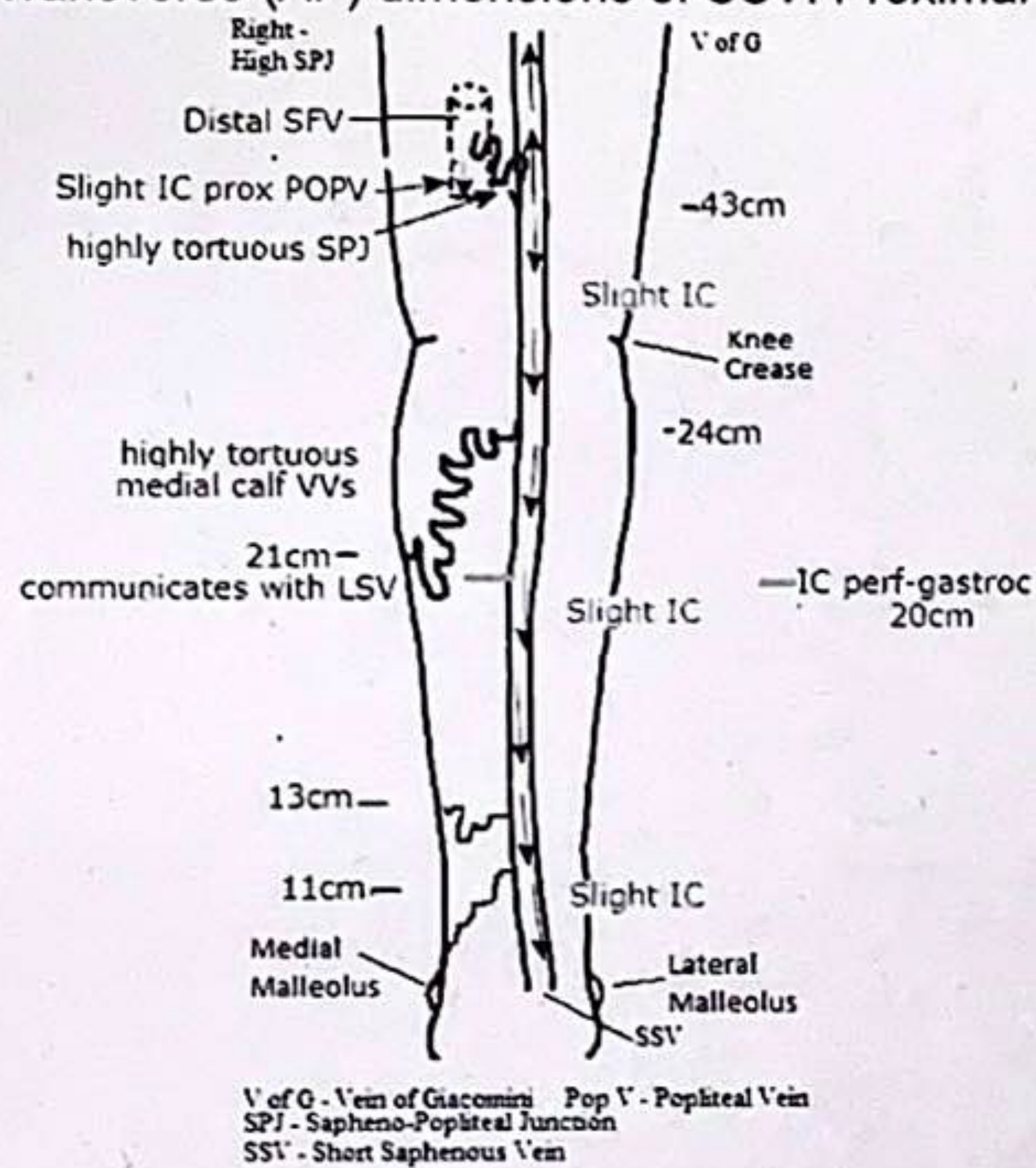
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There is a high sapheno-popliteal junction (SPJ) noted which is highly tortuous and appears incompetent, communicating with the distal SFV (43cm from MM) ?cause of slightly incompetent proximal popliteal vein.

Short Saphenous vein (SSV) is slightly incompetent proximally and is continuous with a competent vein of Giacomini. Incompetent branch noted proximal calf (24cm from MM) which forms highly tortuous medial calf varicosities and communicates with the LSV in the mid calf (21cm from MM). Incompetent perforator to 1 x incompetent medial gastrocnemius vein noted (20cm from MM). further incompetent branches noted at 13cm and 11cm forming visible medial and anterior calf varicosities. Distal to branch at 20cm, the SSV appears slightly incompetent to the ankle.

Transverse (AP) dimensions of LSV: Proximal thigh - 1.32cm, Mid- thigh - 1.23cm, Distal thigh - 1.21cm.

Transverse (AP) dimensions of SSV: Proximal calf - 0.58cm, Mid - calf - 0.42cm, Distal calf - 0.39cm



Reason DVT, Varicose vein
Outcome DVT negative, Incompetence

Right			Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein			Not Assessed	
External Iliac Vein			Not Assessed	
Internal Iliac Vein			Not Assessed	
Common Femoral Vein			Widely Patent	Competent
Profunda Vein			Widely Patent	Competent
Superficial Femoral Vein			Widely Patent	Competent
Popliteal Vein			Widely Patent	Competent
Posterior Tibial Vein			Widely Patent	Competent
Anterior Tibial Vein			Widely Patent	Competent
Peroneal Vein			Widely Patent	Competent
Soleal Vein			Widely Patent	
Gastrocnemius			Widely Patent	
Superficial Veins				
Saphenofemoral Junction			Patent	Incompetent
L Saphenous Vein Above			Patent	Isolated Incompetence
L Saphenous Vein Below			Patent	Incompetent
Vein of Giacomini			Patent	Competent
Saphenopopliteal Junction			Patent	Competent
S Saphenous Vein			Patent	Competent
Evidence of D.V.T.				
Above the knee			No	
Popliteal			No	
Below the knee			No	

Notes

LEFT LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. All visualised deep veins appear widely patent and competent with no evidence of previous DVT.

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent and linear to the mid thigh. Incompetent branch noted mid thigh (53cm from MM) forming medial thigh varicosities. The LSV is then competent and linear to the proximal calf. Incompetent branch noted proximal calf (26cm from MM) forming medial calf varicosities. The LSV remains incompetent and linear to the ankle. Perforator to peroneal vein noted in mid calf (22cm from LM) which appear competent however difficult to assess due to tortuosity, perforator appears to communicate with incompetent lateral/anterior shin varicosities.

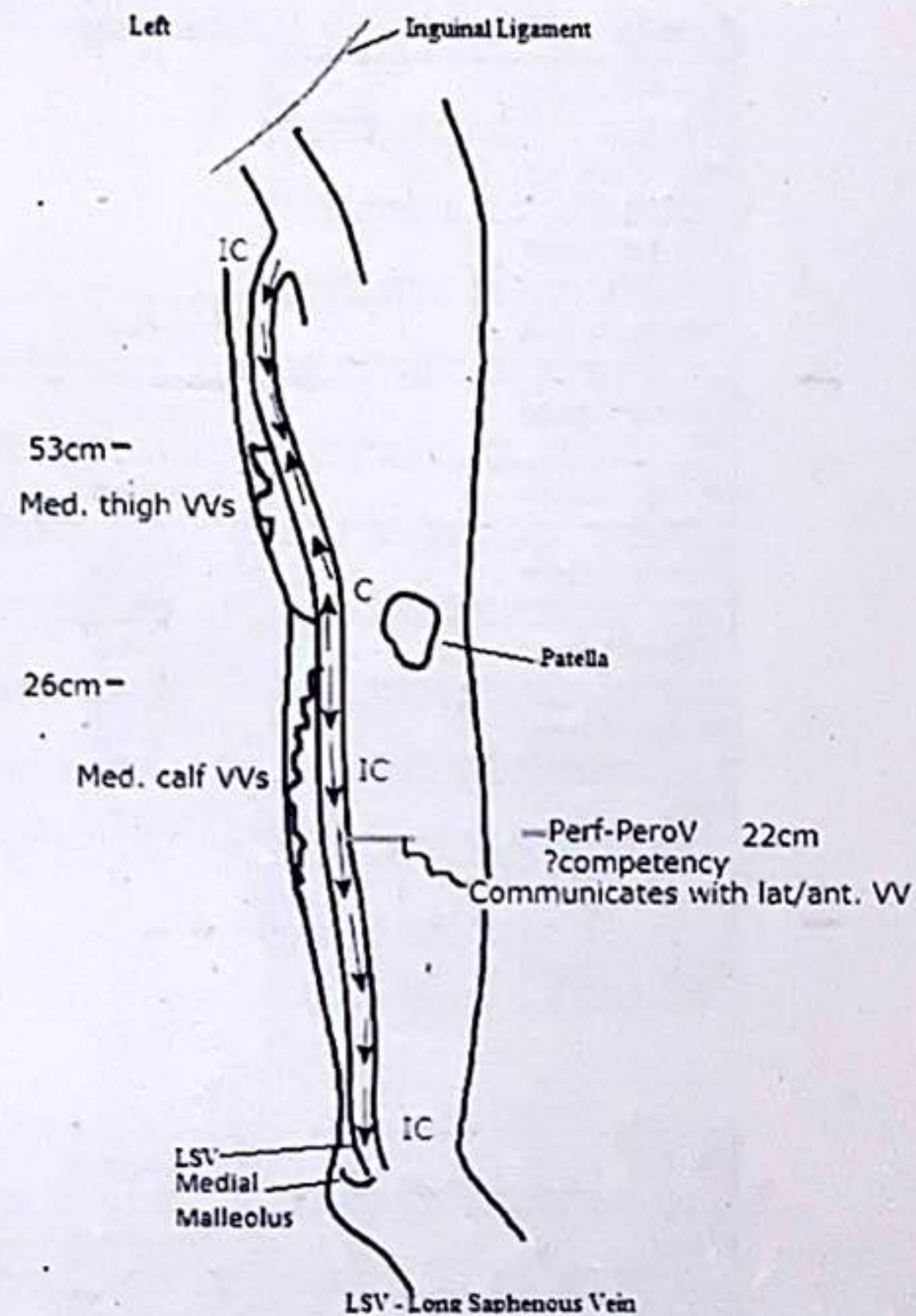
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Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.65cm, Mid- thigh - 0.35cm, Distal thigh - 0.32cm.



Reason DVT, Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Slight Incompetence
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Isolated Incompetence
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent	Competent	Widely Patent	Competent
Gastrocnemius	Widely Patent	Incompetent	Widely Patent	Slight Incompetence
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent	Patent	Incompetent
L Saphenous Vein Above	Patent	Competent	Patent	Incompetent
L Saphenous Vein Below	Patent	Isolated Incompetence	Patent	Competent
Vein of Giacomini	Patent	Competent	Not Identified	
Saphenopopliteal Junction	Patent	Competent	Patent	small calibre
S Saphenous Vein	Patent	Competent	Patent	Isolated Incompetence
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent with no evidence of previous DVT.

RIGHT

1 x right medial gastrocnemius vein appears incompetent. All other deep veins appear widely patent and competent.

Sapheno-femoral junction (SFJ) is incompetent. Incompetent and tortuous anterior thigh vein noted proximally which tracks to the proximal calf communicating with the LSV at 28cm from MM. There is an

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incompetent branch noted in the proximal anterior thigh vein (59cm from MM) which forms medial thigh varicosities. Distal to anterior thigh vein, the LSV is patent, linear and competent in the thigh. The LSV is incompetent and linear for a short length in the proximal calf before incompetent branch noted (25cm from MM) which forms medial calf varicosities. The LSV is then patent, linear and competent to the ankle. Incompetent perforator to medial gastrocnemius vein noted in mid calf (21cm) which further branches to form medial calf varicosities.

Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Sapheno-popliteal junction (SPJ) is patent and competent.

Transverse (AP) dimensions of ATV: Proximal thigh - 0.77cm, Mid- thigh - 0.75cm, Distal thigh - 0.61cm.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.36cm, Mid- thigh - 0.33cm, Distal thigh - 0.29cm.

LEFT

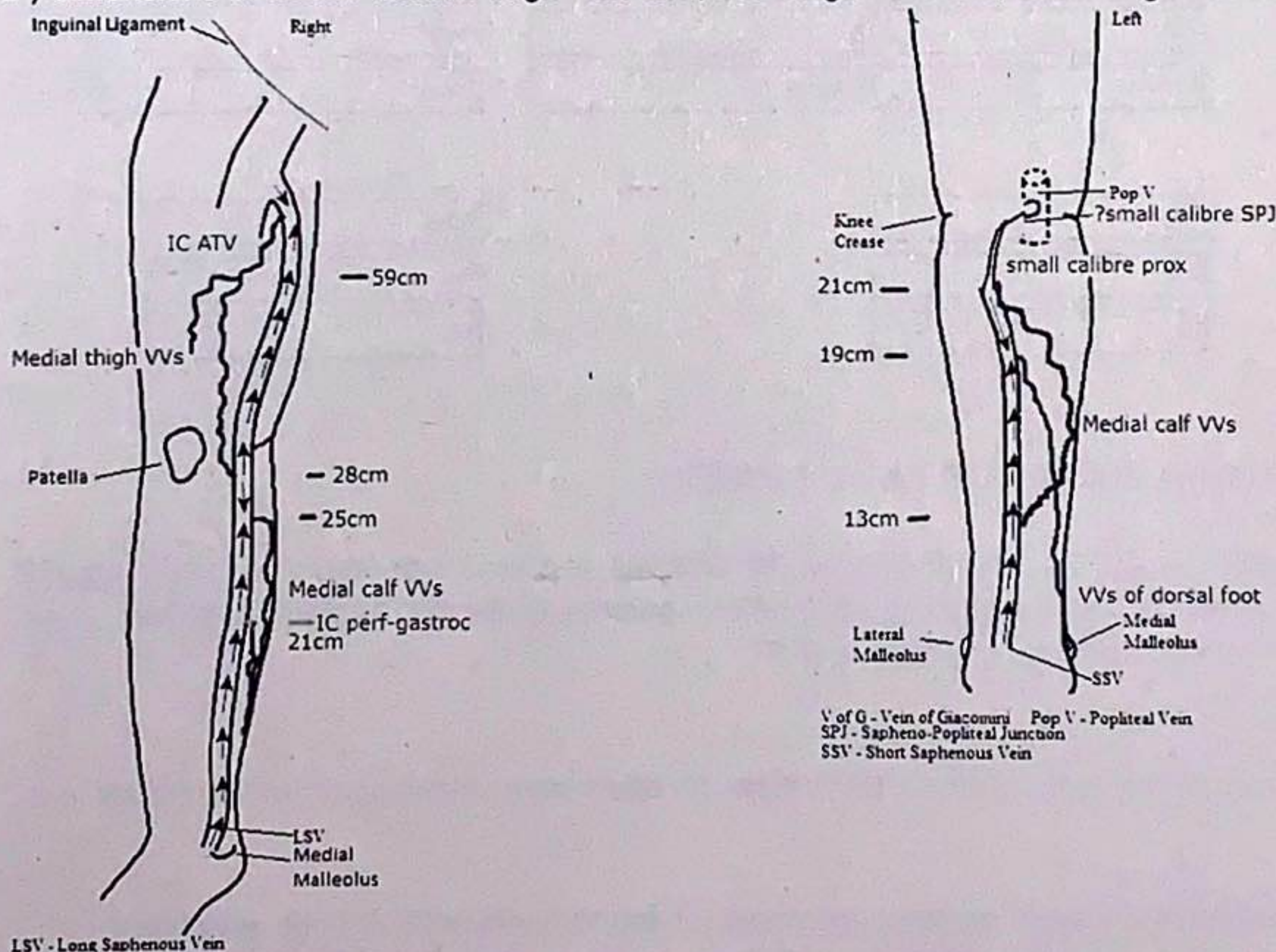
The left common femoral, distal popliteal and 1 x medial gastrocnemius vein appear slightly incompetent. All other deep calf veins appear widely patent and competent.

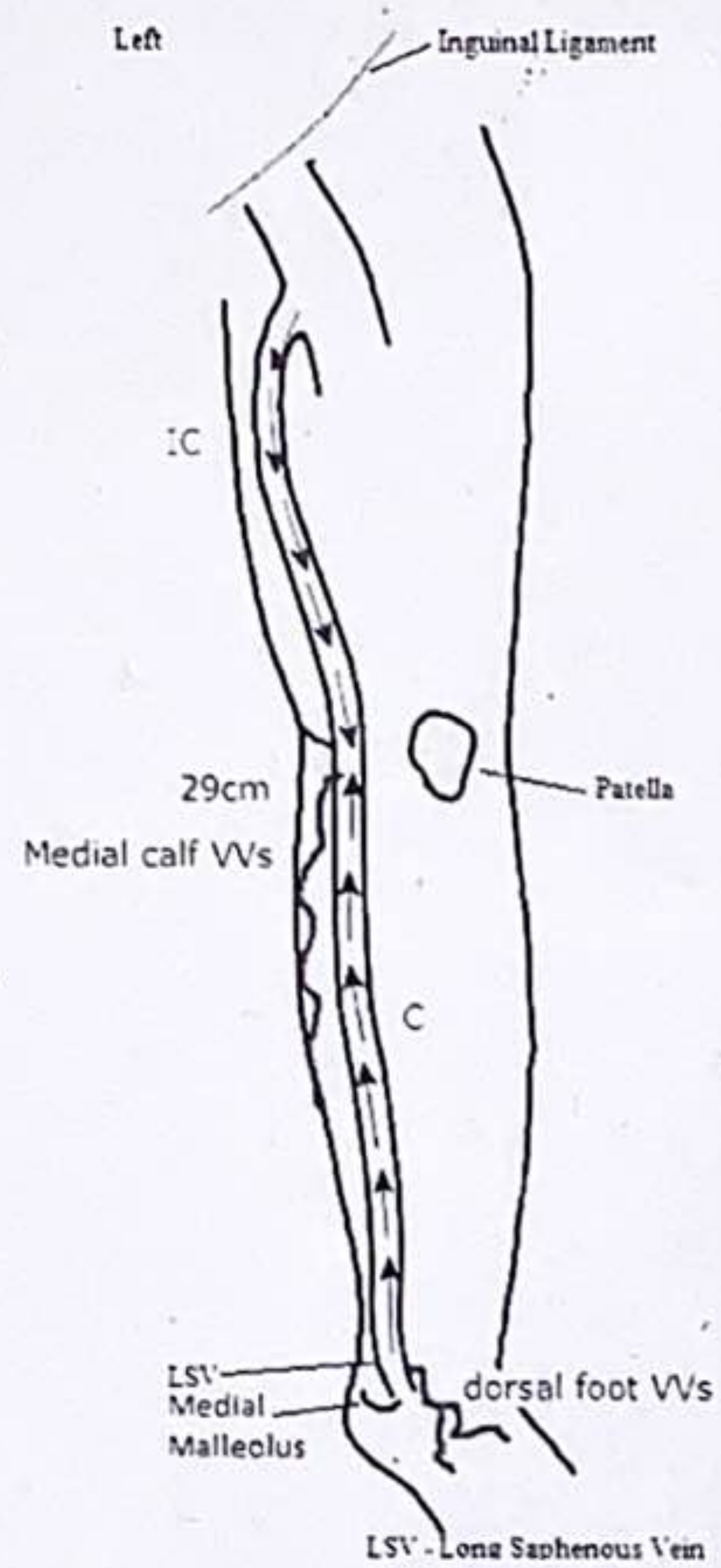
Sapheno-femoral junction (SFJ) is incompetent. The LSV is patent, linear and incompetent in the thigh. Incompetent branch noted proximal calf (29cm from MM) which forms medial calf varicosities. The LSV is then competent and linear to the distal calf. Incompetent branch noted at the ankle which forms varicosities on the dorsal aspect of the foot.

The sapheno-popliteal junction was not identified ?small calibre. The proximal SSV appears patent and is small calibre AP: 0.14cm. Incompetent branch noted proximally (20cm from MM) which forms medial calf varicosities and communicates with the mid SSV (13cm from MM). Distal to proximal branch at 21cm, the SSV is incompetent, before further incompetent branch noted in the mid calf (19cm from MM) which forms medial calf varicosities and communicates with varicosities noted at the dorsal aspect of the foot. Distal to branch noted at 13cm from MM, the SSV is patent and competent to the ankle.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.82cm, Mid- thigh - 0.85cm, Distal thigh - 1.09cm.

Transverse (AP) dimensions of SSV: Proximal thigh - 0.14cm, Mid- thigh - 0.50cm, Distal thigh - 0.38cm.





Reason

Varicose vein

Outcome

DVT negative, Incompetence, Superficial thrombophlebitis

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed			
External Iliac Vein	Not Assessed			
Internal Iliac Vein	Not Assessed			
Common Femoral Vein	Widely Patent	Competent		
Profunda Vein	Widely Patent	Competent		
Superficial Femoral Vein	Widely Patent	Competent		
Popliteal Vein	Widely Patent	Competent		
Posterior Tibial Vein	Widely Patent	Competent		
Anterior Tibial Vein	Widely Patent	Competent		
Peroneal Vein	Widely Patent	Competent		
Soleal Vein	Widely Patent	Competent		
Gastrocnemius	Widely Patent	Competent		
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent		
L Saphenous Vein Above	Patent	Incompetent		
L Saphenous Vein Below	Patent	Isolated Incompetence		
Vein of Giacomini	Patent	Competent		
Saphenopopliteal Junction	Not Identified			
S Saphenous Vein	Patent	Competent		
Evidence of D.V.T.				
Above the knee	No			
Popliteal	No			
Below the knee	No			

Notes
RIGHT LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and demonstrates a normal response on Valsalva manoeuvre, suggesting proximal vein patency. All visualised deep veins appear widely patent and competent with no evidence of previous DVT.

All measurements are proximal to the medial malleolus unless otherwise stated.

Sapheno-femoral junction (SFJ) is incompetent and dilates to AP ~2.01cm. Long Saphenous vein (LSV) is incompetent and linear in the thigh, leaving the fascia in the mid thigh (48cm). Incompetent branch noted proximal calf (29cm) forming visible medial and posterior calf varicosities that communicate with mid SSV (20cm). Minimal areas of old non-occlusive superficial thrombophlebitis identified in medial calf varicosities.

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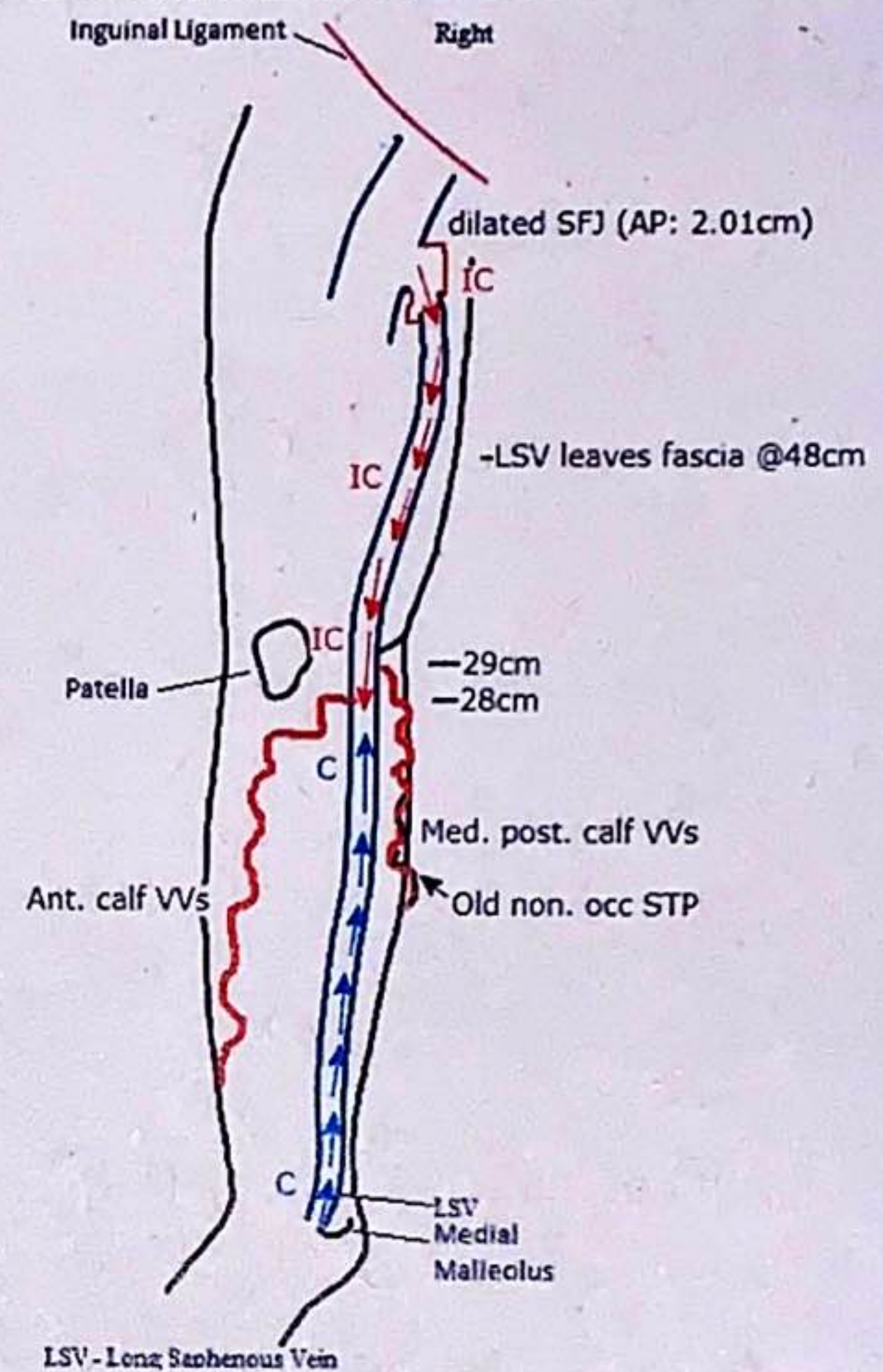
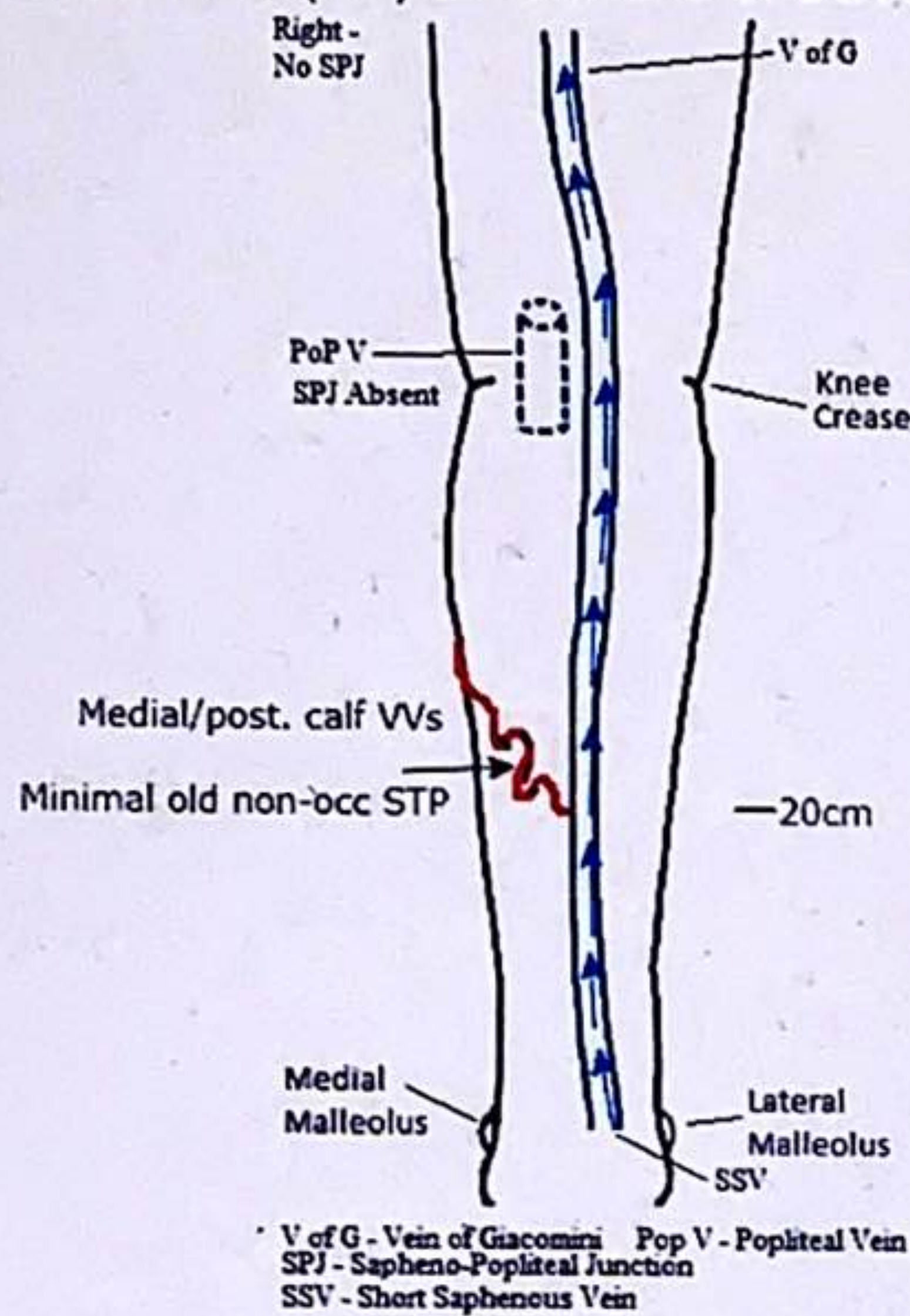
Further incompetent branch noted proximal calf (28cm) which forms anterior calf varicosities that track distally to the ankle. Distal to this the LSV appears competent and linear to the ankle.

Sapheno-popliteal junction (SPJ) was not identified.

Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV: Proximal thigh - 1.07cm, Mid- thigh - 0.95cm, Distal thigh - 0.93cm.

Transverse (AP) dimensions of SSV: Proximal calf - 0.82cm, Mid - calf - 0.39cm, Distal calf - 0.32cm.



Reason Varicose vein
Outcome DVT negative, Widely patent , Competent

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent	Competent	Widely Patent	Competent
Gastrocnemius	Widely Patent	Competent	Widely Patent	Competent
Superficial Veins				
Saphenofemoral Junction	Patent	Competent	Patent	Competent
L Saphenous Vein Above	Patent	Competent	Patent	Competent
L Saphenous Vein Below	Patent	Competent	Patent	Competent
Vein of Giacomini	Patent	Competent	Patent	Competent
Saphenopopliteal Junction	Patent	Competent	Patent	Competent
S Saphenous Vein	Patent	Competent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and demonstrates a normal response on Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is competent. Long Saphenous vein (LSV) is competent and linear in the thigh and calf. Small branch noted mid thigh (64cm) which forms medial superficial vein that appears

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competent and tracks to the ankle, communicating with the LSV in the distal thigh (54cm) and proximal calf (34cm). Further competent branch noted mid calf which forms small medial superficial veins that appear competent.

Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini. Sapheno-popliteal junction (SPJ) is patent and in competent.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.59cm, Mid- thigh - 0.52cm, Distal thigh - 0.56cm.
Transverse (AP) dimensions of SSV: Proximal calf - 0.45cm, Mid - calf - 0.40cm, Distal calf - 0.29cm

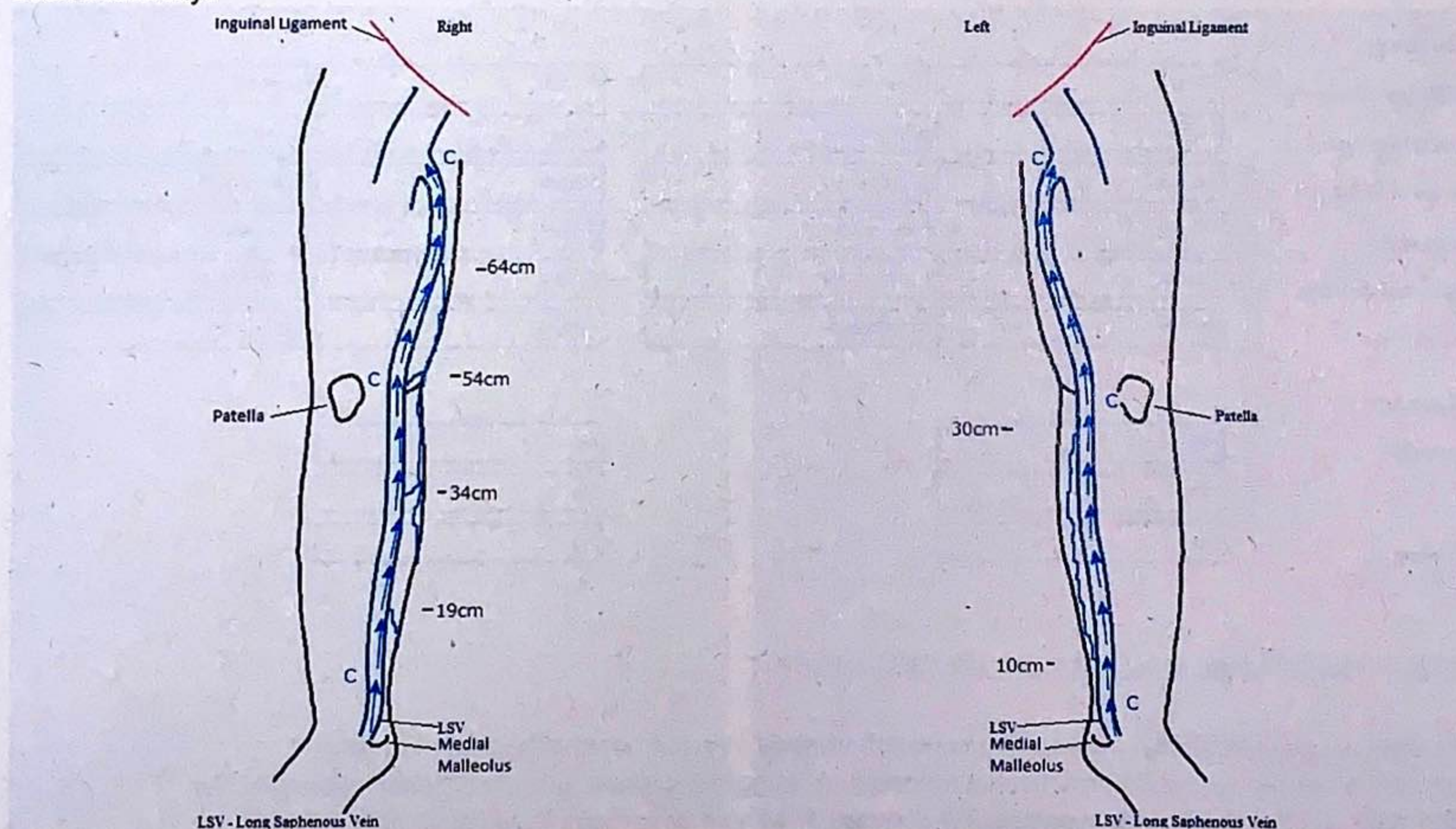
LEFT

Sapheno-femoral junction (SFJ) is competent. Long Saphenous vein (LSV) is competent and linear in the thigh and calf. Small branch noted proximal calf (30cm) which appears competent and tracks distally to the ankle, communicating with LSV distal calf (10cm).

Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini. Sapheno-popliteal junction (SPJ) is patent and in competent.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.51cm, Mid- thigh - 0.45cm, Distal thigh - 0.51cm.
Transverse (AP) dimensions of SSV: Proximal calf - 0.45cm, Mid - calf - 0.38cm, Distal calf - 0.41cm.

CONCLUSION: No evidence of right or left lower limb DVT or venous incompetence identified from this scan bilaterally.



Reason Varicose vein
Outcome DVT negative, Competent

	Right		Left	
	Patency	Competency	Patency	Competency
Deep Veins				
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent		Widely Patent	
Superficial Veins				
Saphenofemoral Junction	Patent	Competent	Patent	Competent
L Saphenous Vein Above	Patent	Competent	Patent	Competent
L Saphenous Vein Below	Patent	Competent	Patent	Competent
Vein of Giacomini	Patent	Competent	Patent	Competent
Saphenopopiteal Junction	Not Identified		Not Identified	
S Saphenous Vein	Patent	Competent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and a normal response on Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is widely patent and competent. Long Saphenous vein (LSV) is widely patent, competent and linear in the thigh and calf. Small branch noted at level of the knee crease (33cm) which appears competent and forms small superficial veins in the medial calf, communicating with LSV in

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the mid calf (20cm).

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV:

Proximal thigh - 0.35cm,

Mid thigh - 0.27cm,

Distal thigh - 0.32cm.

Proximal calf - 0.28cm,

Mid calf - 0.27cm,

Distal calf - 0.27cm.

LEFT

Sapheno-femoral junction (SFJ) is widely patent and competent. Long Saphenous vein (LSV) is widely patent, competent and linear in the thigh and calf. Small branch noted in the mid thigh (60cm) which appears patent and competent, forming small superficial veins in the medial thigh, communicating with LSV in the distal thigh (32cm). Incompetent branch noted in the mid thigh (57cm) which tracks anteriorly to the mid calf over the knee, forming visible anterior calf varicosities.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV:

Proximal thigh - 0.40cm,

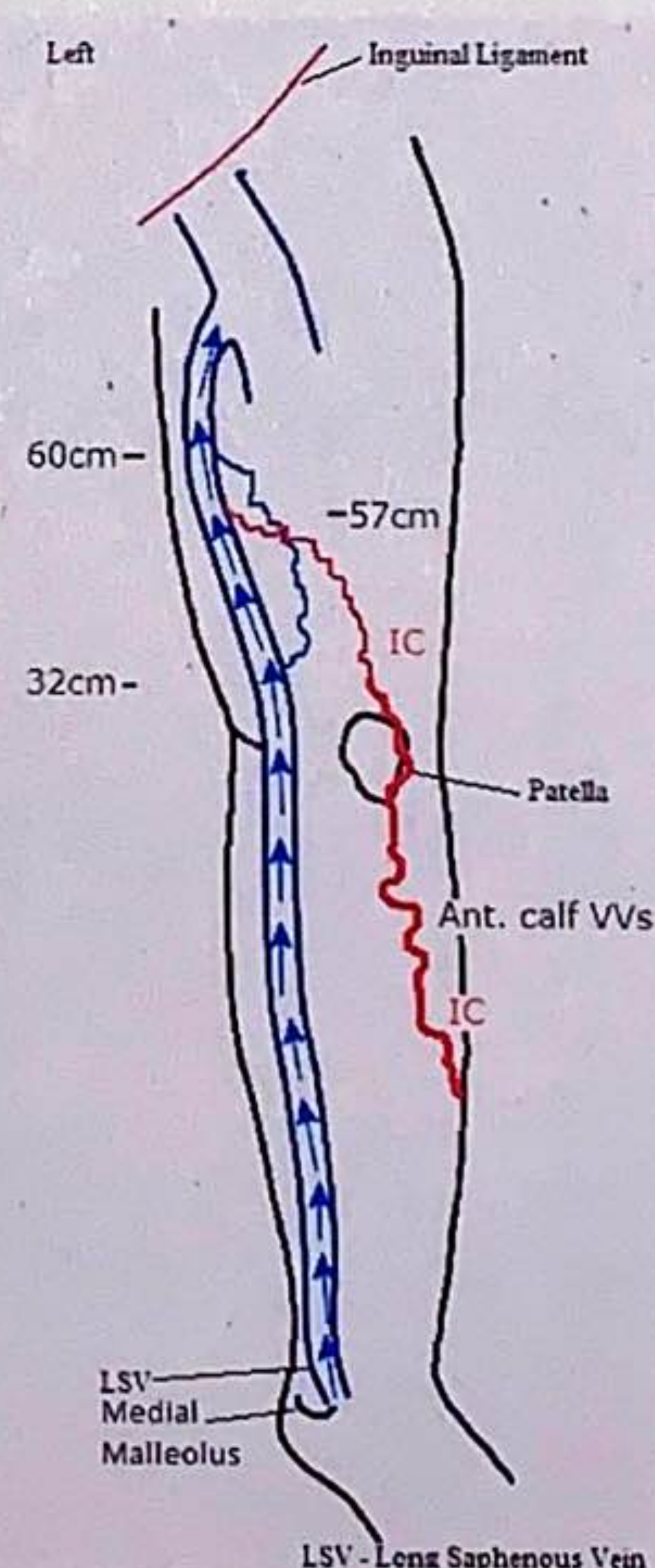
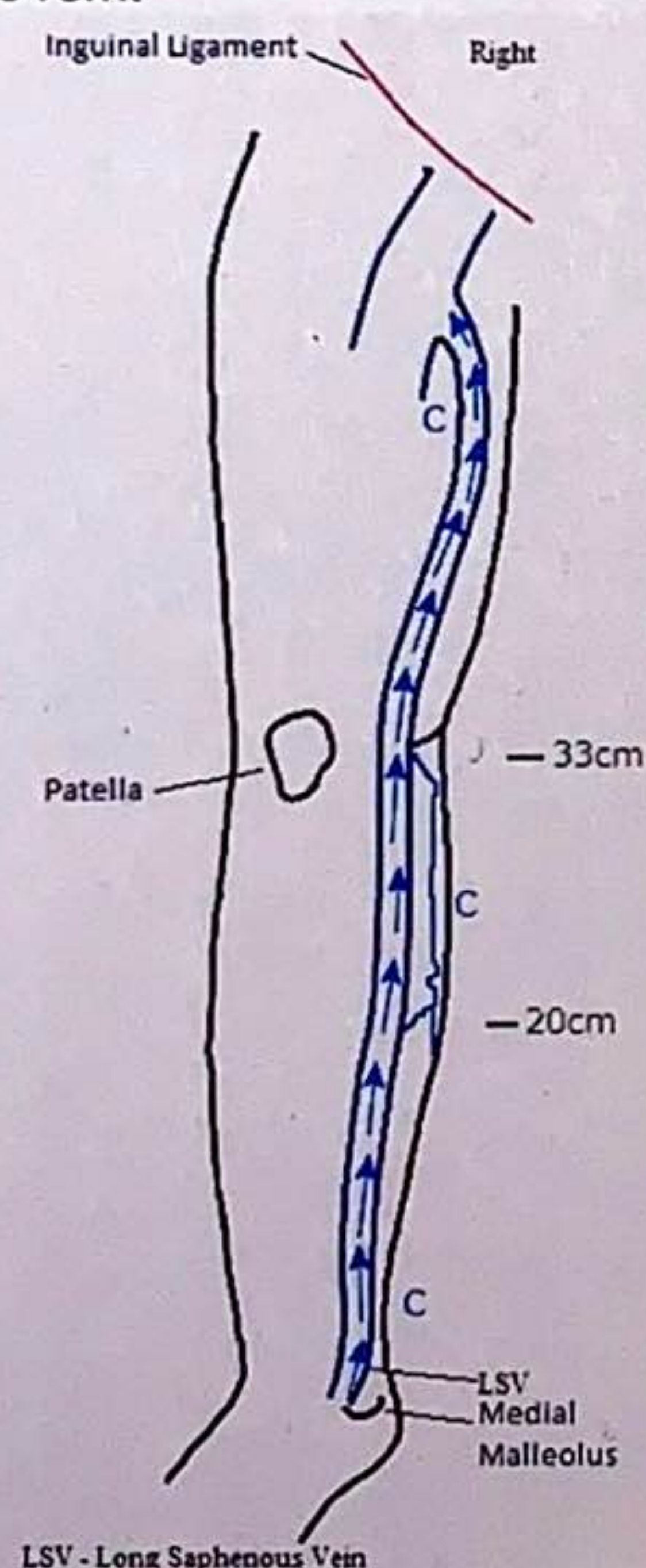
Mid thigh - 0.32cm,

Distal thigh - 0.32cm.

Proximal calf - 0.31cm,

Mid calf - 0.33cm,

Distal calf - 0.31cm.



Reason DVT, Varicose vein
Outcome DVT negative, Normal, Competent

	Right		Left	
	Patency	Competency	Patency	Competency
Deep Veins				
Common Iliac Vein			Not Assessed	
External Iliac Vein			Not Assessed	
Internal Iliac Vein			Not Assessed	
Common Femoral Vein			Widely Patent	Competent
Profunda Vein			Widely Patent	Competent
Superficial Femoral Vein			Widely Patent	Competent
Popliteal Vein			Widely Patent	Competent
Posterior Tibial Vein			Widely Patent	Competent
Anterior Tibial Vein			Widely Patent	Competent
Peroneal Vein			Widely Patent	Competent
Soleal Vein			Widely Patent	
Gastrocnemius			Widely Patent	
Superficial Veins				
Saphenofemoral Junction			Patent	Competent
L Saphenous Vein Above			Patent	Competent
L Saphenous Vein Below			Patent	Competent
Vein of Giacomini			Patent	Competent
Saphenopopliteal Junction			Not Identified	
S Saphenous Vein			Patent	Competent
Evidence of D.V.T.				
Above the knee			No	
Popliteal			No	
Below the knee			No	

Notes**LEFT LOWER LIMB VENOUS DUPLEX ASSESSMENT**

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. All visualised deep veins appear widely patent and competent with no evidence of previous DVT.

All measurements are proximal to the medial malleolus unless otherwise stated.

Sapheno-femoral junction (SFJ) is competent. Long Saphenous vein (LSV) is competent and linear in the thigh and calf, remaining within the fascia. Small branch noted proximal calf (28cm) which forms small posterior superficial calf veins and appears competent. Distal LSV is highly branched at the ankle (7cm), however branches appear small calibre and are competent.

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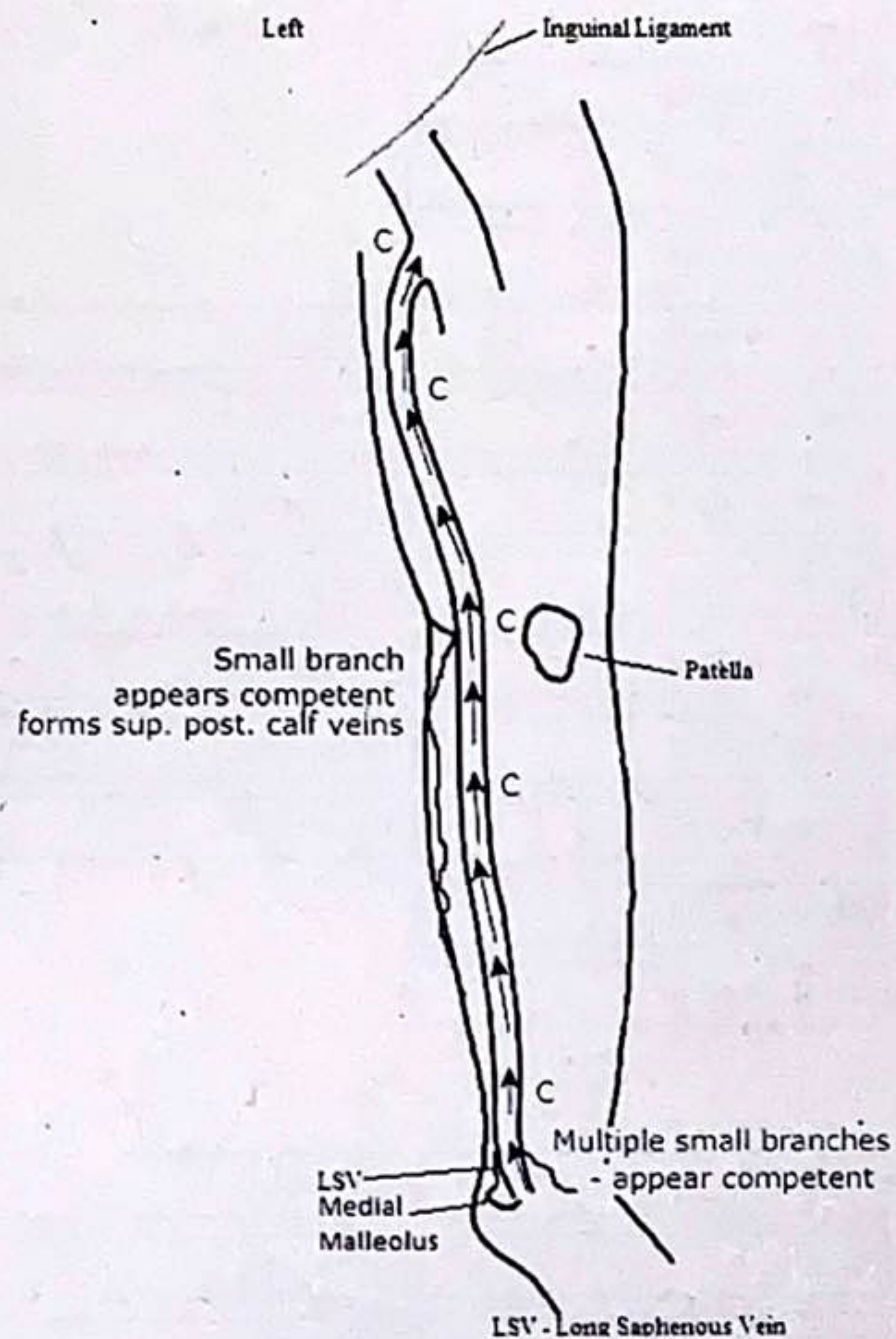
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Sapheno-popliteal junction (SPJ) was not identified.

Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.44cm, Mid- thigh - 0.48cm, Distal thigh - 0.40cm.

Transverse (AP) dimensions of LSV: Proximal calf - 0.27cm, Mid - calf - 0.34cm, Distal calf - 0.32cm.



Reason Varicose vein
Outcome DVT positive - chronic, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Areas of Thrombus	Old Thrombus	Areas of Thrombus	Old Thrombus
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent	Competent	Widely Patent	Competent
Gastrocnemius	Widely Patent	Competent	Widely Patent	Competent
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent	Patent	?competency see noted
L Saphenous Vein Above	Patent	Incompetent	Patent	Competent
L Saphenous Vein Below	Patent	Isolated Incompetence	Patent	Competent
Vein of Giacomini	Not Identified		Not Identified	
Saphenopopliteal Junction	Patent	Competent	Patent	Competent
S Saphenous Vein	Patent	Competent	Patent	Competent
Evidence of D.V.T.				
Above the knee	Yes	Old	Yes	Old
Popliteal	No		No	
Below the knee	No		No	

Notes**BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT****RIGHT**

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. Old non-occlusive thrombus identified in the right proximal superficial femoral vein. All other visualised deep veins appear widely patent with no evidence of previous DVT. The mid superficial femoral vein appears incompetent due to incompetent perforator (55cm proximal to MM) to mid thigh LSV causing reflux. All other visualised deep veins appear competent.

All measurements are proximal to the medial malleolus unless otherwise stated.

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Sapheno-femoral junction (SFJ) is incompetent and highly tortuous. Long Saphenous vein (LSV) is incompetent and highly tortuous for a short length in the proximal thigh, becoming linear proximal thigh (72cm) to mid thigh (63cm). Incompetent anterior thigh vein branch noted from SFJ forming small medial thigh varicosities.

Incompetent branch noted proximal thigh (63cm) forming medial thigh varicosities that communicate with LSV mid thigh (60cm). The LSV then becomes highly tortuous and remains incompetent, dilating to AP 1.61cm to the level of an incompetent LSV perforator to mid SFV (55cm) - appears to cause reflux noted in mid SFV. Distal to this, the LSV appears linear and incompetent before leaving the fascia mid-distal thigh and becoming tortuous to the mid calf, and remaining incompetent.

Distal to this the LSV appears competent and linear in the mid-distal calf. Incompetent branch note proximal calf (29cm) which forms medial calf varicosities and communicates with LSV in the mid calf (20cm). Medial calf varicosities communicate with SSV in the mid calf (20cm)

Sapheno-popliteal junction (SPJ) is patent and competent. Short saphenous vein (SSV) is patent and competent.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.83cm, Mid- thigh - 0.38cm, Distal thigh - 0.64cm.

Transverse (AP) dimensions of LSV: Proximal calf - 0.69cm, Mid - calf - 0.32cm, Distal calf - 0.32cm

LEFT

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. Old non-occlusive thrombus identified in the right proximal superficial femoral vein. All other visualised deep veins appear widely patent and competent with no evidence of previous DVT.

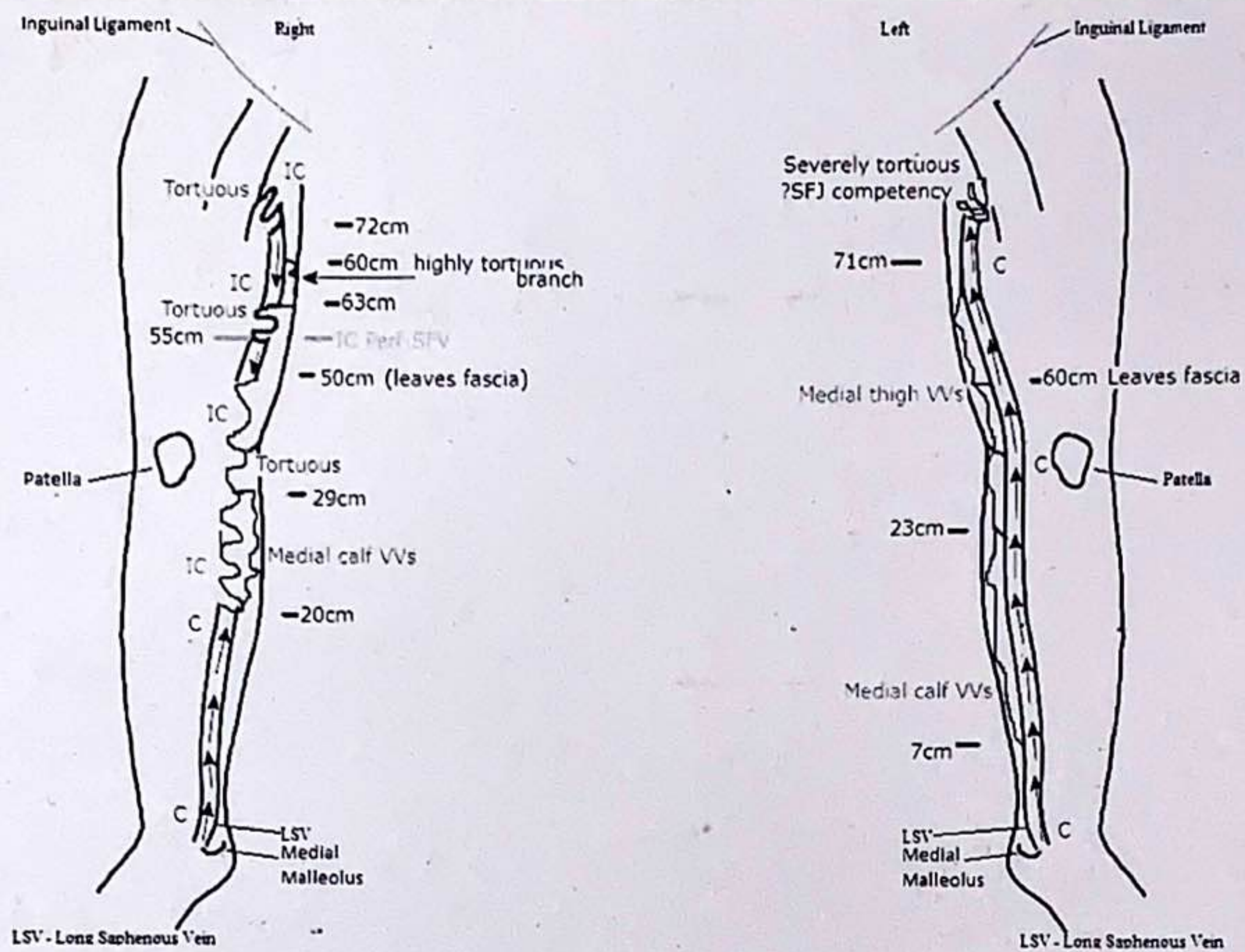
All measurements are proximal to the medial malleolus unless otherwise stated.

Sapheno-femoral junction (SFJ) appears severely tortuous ?competency. Long Saphenous vein (LSV) appears competent and linear in the thigh and calf, leaving the fascia in the mid thigh (60cm). Incompetent branch noted proximal thigh which appears tortuous and tracks to the distal calf, communicating with the LSV in the mid thigh (60cm), proximal calf (23cm) and distal calf (7cm).

Sapheno-popliteal junction (SPJ) is patent and competent. Short saphenous vein (SSV) is patent and competent.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.45cm, Mid- thigh - 0.39cm, Distal thigh - 0.46cm.

Transverse (AP) dimensions of LSV: Proximal calf - 0.45cm, Mid - calf - 0.28cm, Distal calf - 0.30cm



Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent	Competent	Widely Patent	Competent
Gastrocnemius	Widely Patent	Competent	Widely Patent	Competent
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent	Patent	Incompetent
L Saphenous Vein Above	Patent	Competent	Patent	Competent
L Saphenous Vein Below	Patent	Competent	Patent	Competent
Vein of Giacomini	Not Identified		Patent	Competent
Saphenopopliteal Junction	Patent	Competent	Not Identified	
S Saphenous Vein	Patent	Competent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is competent and linear in the thigh and calf, leaving the fascia at the level of the knee crease and returning to fascia in the mid calf.

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incompetent anterior thigh vein branch (AP: 0.64cm) from SFJ tracks anterolaterally to the distal thigh which then tracks laterally to distal calf - vessel appears mildly tortuous.

Sapheno-popliteal junction (SPJ) is patent and competent. Short saphenous vein (SSV) patent and competent.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.26cm, Mid- thigh - 0.23cm, Distal thigh - 0.25cm.
Transverse (AP) dimensions of LSV: Proximal calf - 0.24cm, Mid - calf - 0.22cm, Distal calf - 0.21cm.

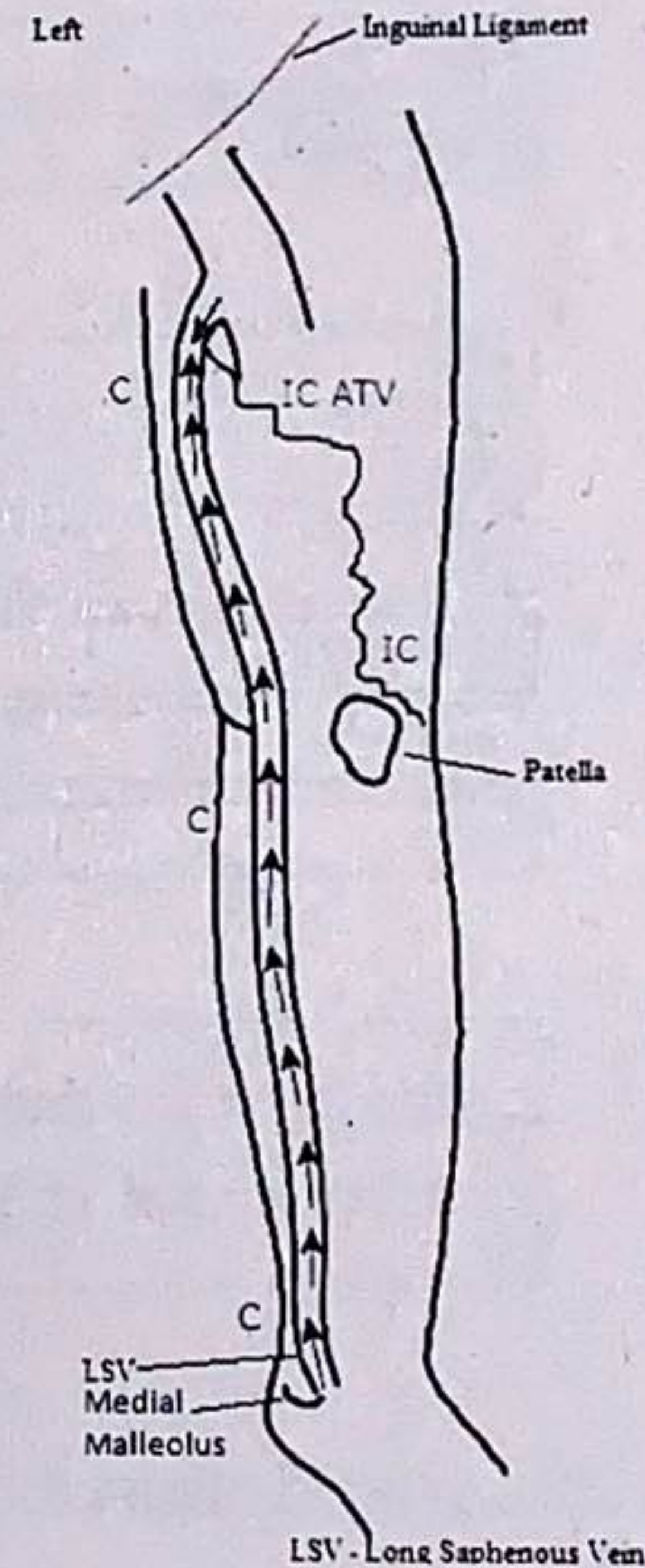
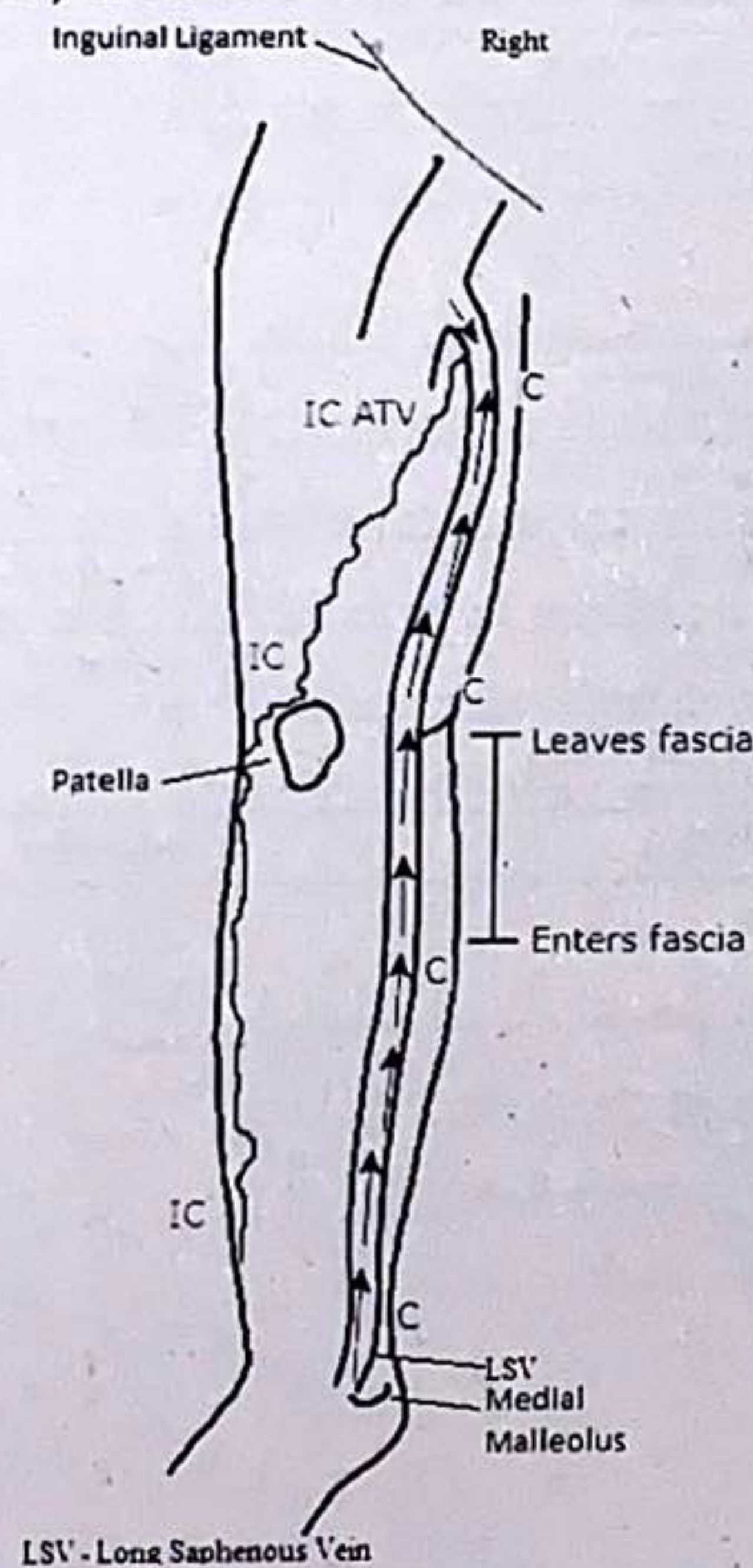
LEFT

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is competent and linear in the thigh and calf, remaining within the fascia.

Incompetent anterior thigh vein branch (AP: 0.50cm) from SFJ tracks anterolaterally to the distal thigh - vessel appears mildly tortuous.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV: Proximal thigh - 0.30cm, Mid- thigh - 0.30cm, Distal thigh - 0.36cm.
Transverse (AP) dimensions of LSV: Proximal calf - 0.29cm, Mid - calf - 0.21cm, Distal calf - 0.21cm.



Reason DVT, Varicose vein

Outcome DVT negative, Superficial oedema, Incompetence, Superficial thrombophlebitis

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein			Not Assessed	
External Iliac Vein			Not Assessed	
Internal Iliac Vein			Not Assessed	
Common Femoral Vein			Widely Patent	Competent
Profunda Vein			Widely Patent	Competent
Superficial Femoral Vein			Widely Patent	Competent
Popliteal Vein			Widely Patent	Competent
Posterior Tibial Vein			Patent	
Anterior Tibial Vein			Patent	
Peroneal Vein			Patent	
Soleal Vein			Patent	
Gastrocnemius			Patent	
Superficial Veins				
Saphenofemoral Junction			Patent	Incompetent
L Saphenous Vein Above			Patent	Incompetent
L Saphenous Vein Below			Patent	Incompetent
Vein of Giacomini			Patent	
Saphenopopliteal Junction				
S Saphenous Vein			Patent	Competent
Evidence of D.V.T.				
Above the knee			No	
Popliteal			No	
Below the knee			No	

Notes**LEFT LOWER LIMB VENOUS DUPLEX ASSESSMENT**

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency. All visualised deep veins up to and including the popliteal vein appear widely patent and competent with no evidence of previous DVT. Deep calf veins were poorly visualised due to extensive superficial oedema and hardened skin/poor tissue resolution - however appear patent with reasonable colour filling and no evidence of thrombus.

All measurements are proximal to the medial malleolus unless otherwise stated.

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent in the thigh and calf. Incompetent branch noted mid calf LSV (29cm) forming posterior calf varicosity. Multiple incompetent

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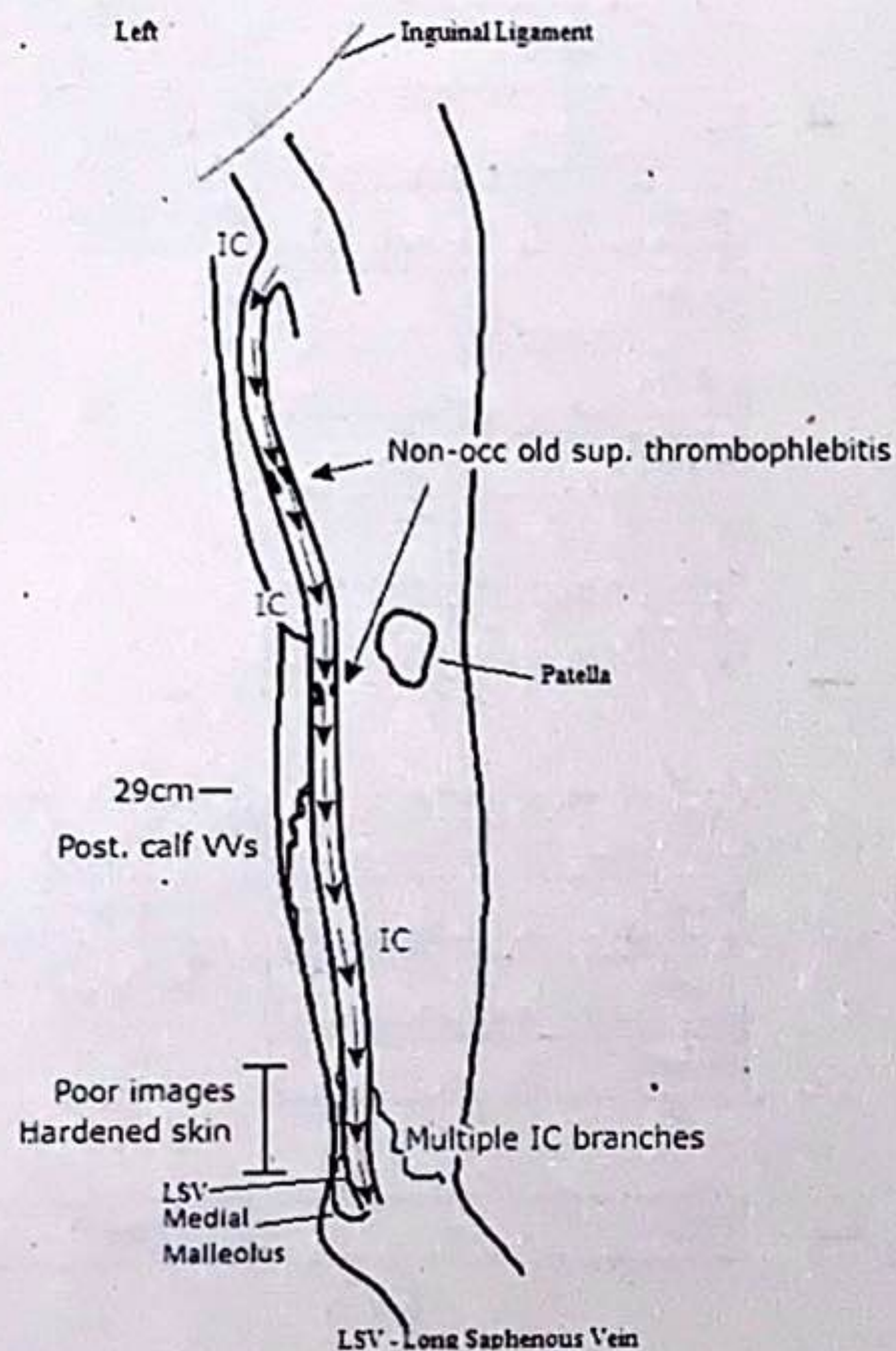
branches noted distally, however distal LSV poorly visualised due to hardened skin and poor tissue resolution.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of thigh LSV: Proximal - 0.96cm, Mid - 0.96cm, Distal - 0.88cm.

Transverse (AP) dimensions of calf LSV: Proximal - 1.24cm, Mid - 0.86cm, Distal - poor views.

Additional comments: Minimal areas of old superficial thrombophlebitis identified in the mid thigh LSV and proximal calf LSV.



Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Isolated Incompetence	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent	Competent	Widely Patent	Competent
Superficial Veins				
Saphenofemoral Junction	Widely Patent	Incompetent	Widely Patent	Incompetent
L Saphenous Vein Above	Widely Patent	Incompetent	Widely Patent	Incompetent
L Saphenous Vein Below	Widely Patent	Isolated Incompetence	Widely Patent	Isolated Incompetence
Vein of Giacomini	Widely Patent	Competent	Widely Patent	Competent
Saphenopopliteal Junction	Not Identified		Not Identified	
S Saphenous Vein	Widely Patent	Competent	Widely Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes**BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT**

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT, with the exception of the right popliteal vein which appears widely patent and slightly incompetent.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent and linear in

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the thigh.

Incompetent branch noted proximally (34cm) forming tortuous medial calf varicosities that track distally and anteriorly. Distal to this the LSV is incompetent to the mid calf. Highly tortuous LSV region noted from 26-21cm which is patent and incompetent. Incompetent branch noted mid calf (19cm) forming medial calf varicosities. Distal to this the LSV is competent to the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Incompetent branch noted mid calf (18cm) which communicates with medial calf varicosities.

Transverse (AP) dimensions of thigh LSV: Proximal thigh - 1.06cm, Mid- thigh - 0.95cm, Distal thigh - 1.07cm.

Transverse (AP) dimensions of calf LSV: Proximal calf - 1.03cm, Mid - calf - 0.40cm, Distal calf - 0.49cm

LEFT

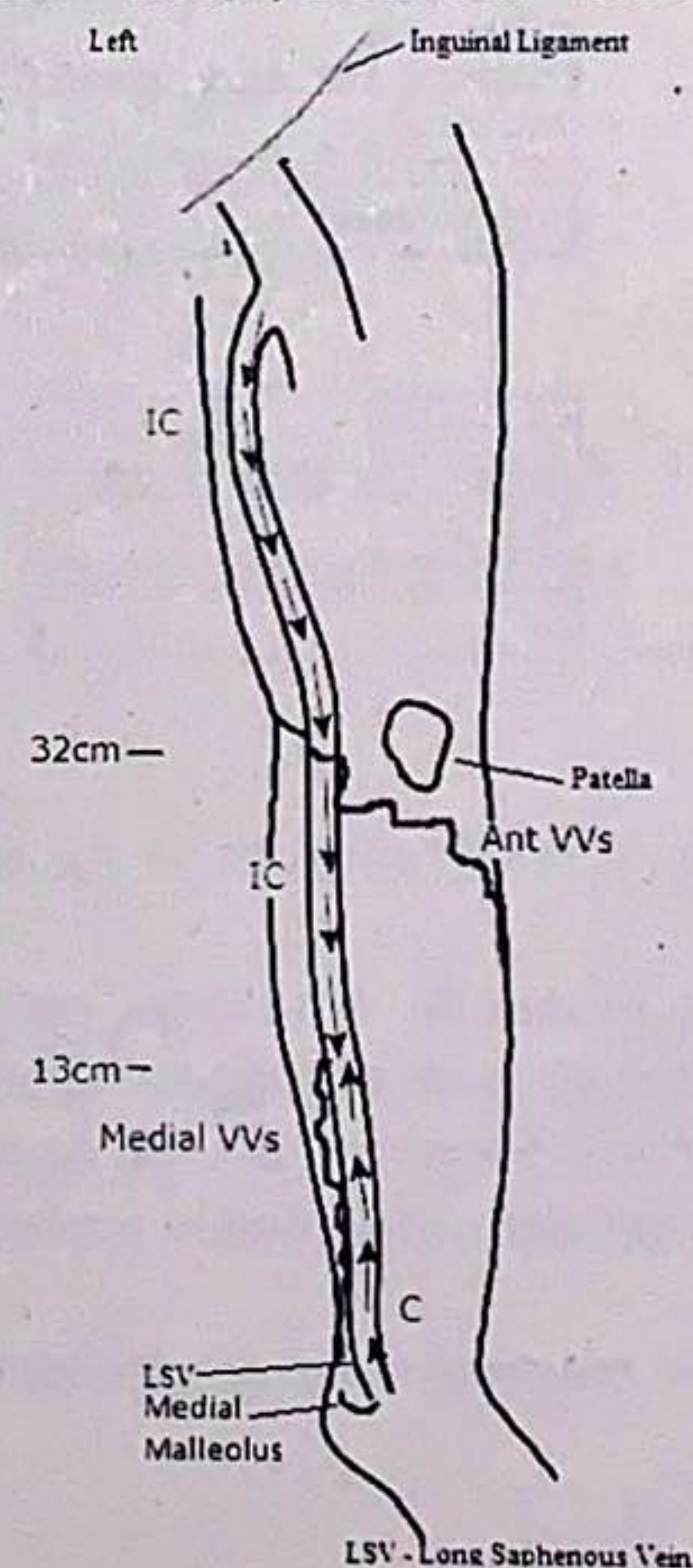
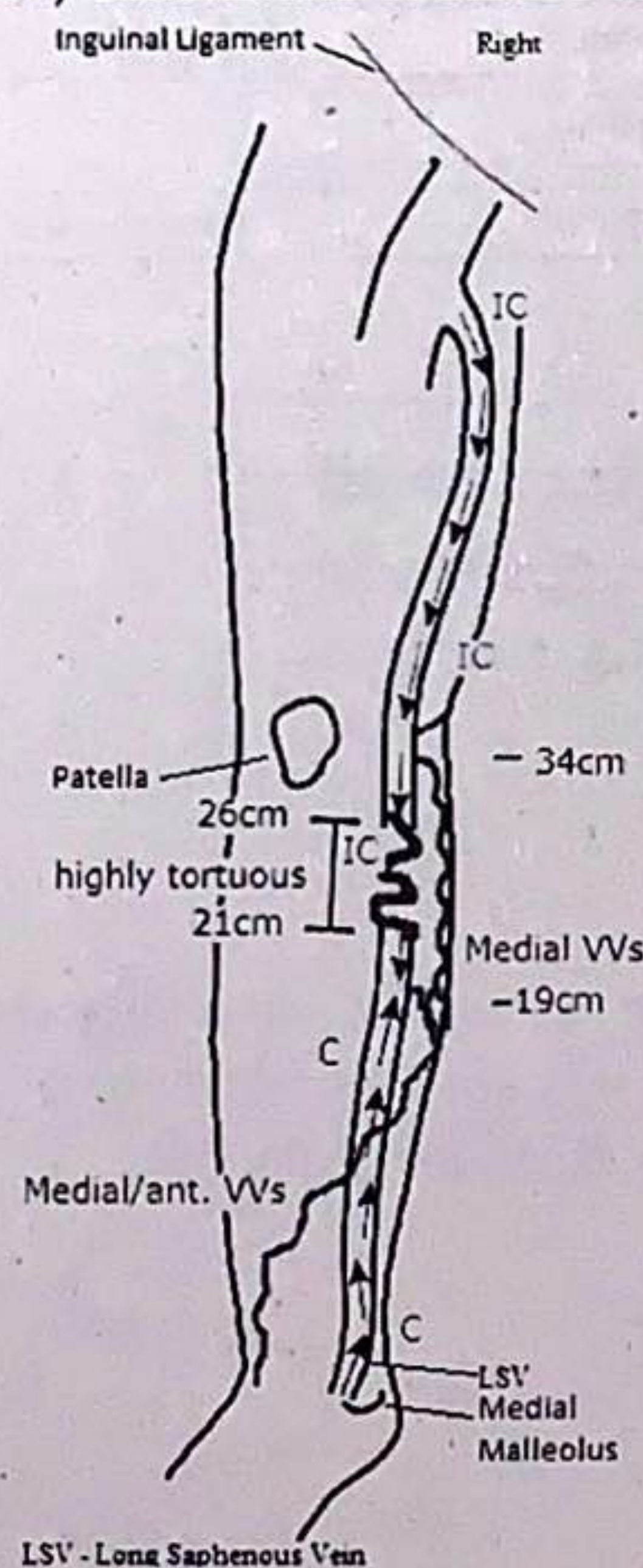
Sapheno-femoral junction (SFJ) is incompetent. Long Saphenous vein (LSV) is incompetent and linear in the thigh.

Incompetent branch noted proximal calf (32cm) forming visible anterior varicosities. Distal to this the LSV is incompetent to the mid calf. Incompetent branch noted mid calf (13cm) forming medial calf varicosities. Distal to this the LSV is competent to the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of thigh LSV: Proximal thigh - 1.2cm, Mid- thigh - 1.29cm, Distal thigh - 1.11cm.

Transverse (AP) dimensions of calf LSV: Proximal calf - 1.14cm, Mid - calf - 0.93m, Distal calf - 0.64cm



Reason Varicose vein
Outcome DVT negative, Incompetence

	Right		Left	
Deep Veins	Patency	Competency	Patency	Competency
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent		Widely Patent	
Superficial Veins				
Saphenofemoral Junction	Patent	?neovascularisation	Not Identified	see notes
L Saphenous Vein Above	Not Identified	see notes	Not Identified	see notes
L Saphenous Vein Below	Patent	Competent	Not Identified	see notes
Vein of Giacomini	Patent	Competent	Not Identified	
Saphenopopliteal Junction	Patent	Incompetent	Not Identified	
S Saphenous Vein	Patent	Incompetent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes

BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and responds normally to a Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) appears highly tortuous ?competency ?neovascularisation. Incompetent branch forming incompetent anterior thigh vein noted proximally (55cm) tracking anteriorly over the knee,

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forming visible anterior varicosities. The LSV was not identified mid-distal thigh ?due to previous surgery. Vessel appears to reform proximal calf (29cm) and appears patent and competent to the mid calf, becoming small calibre distally ?native vessel.

Sapheno-popliteal junction (SPJ) appears patent and incompetent.

Short Saphenous vein (SSV) is patent and incompetent proximally. Incompetent branch noted proximally (24cm) forming posterior calf varicosities. SSV remains incompetent to distal calf. Incompetent branch noted distal calf (7cm) forming medial calf varicosities. Distal to this the SSV appears patent and competent.

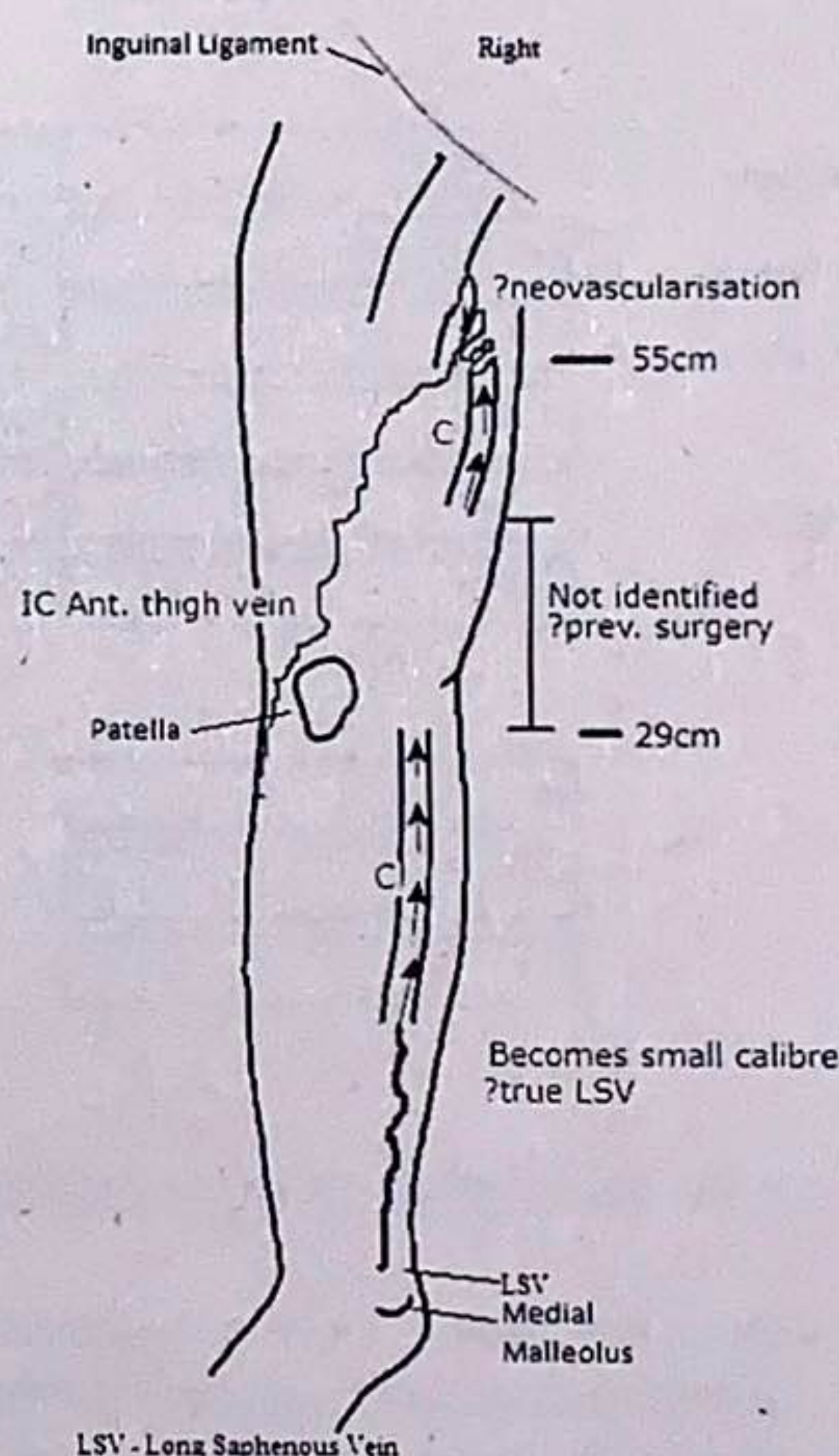
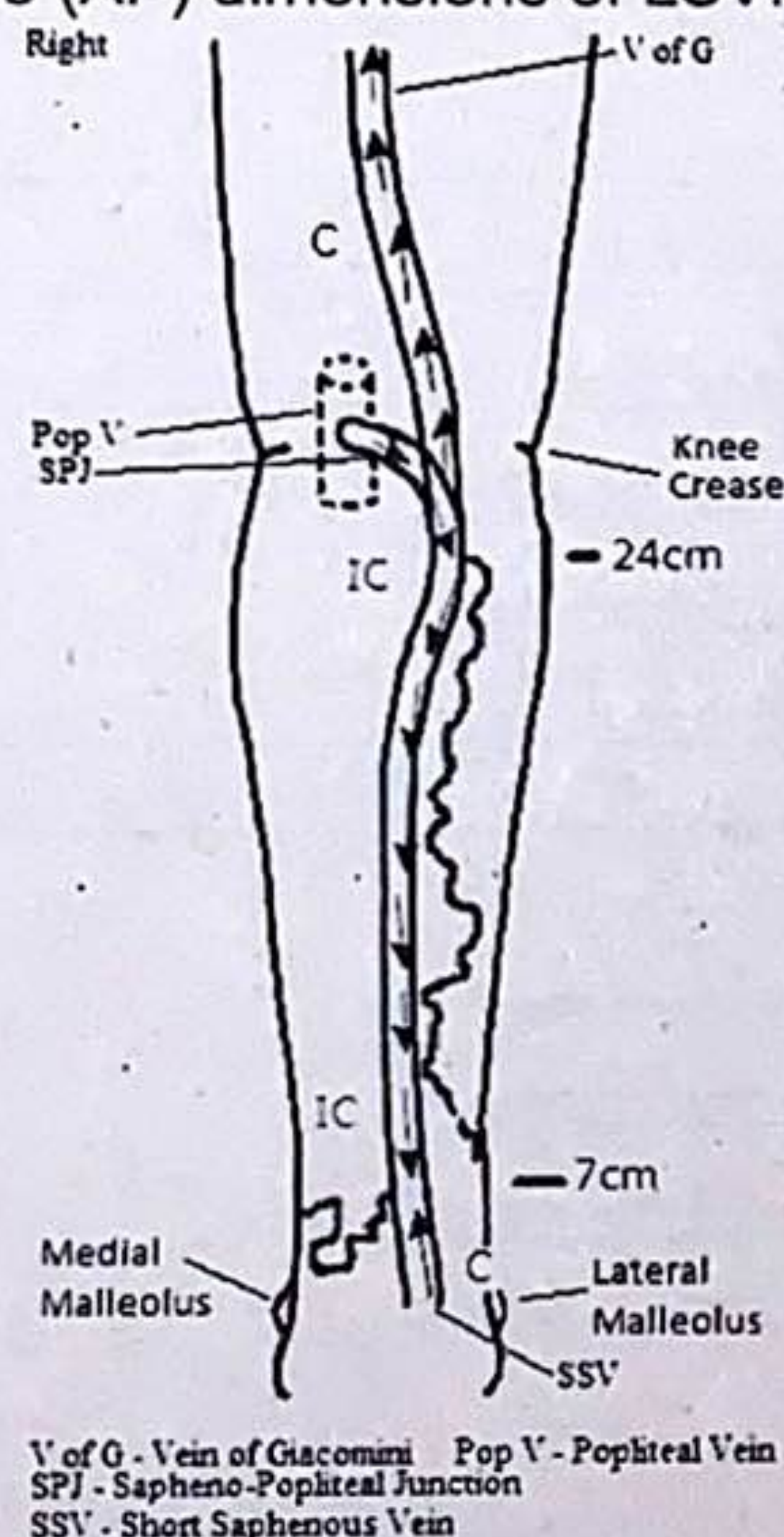
Transverse (AP) dimensions of LSV: Distal thigh - 0.22cm.

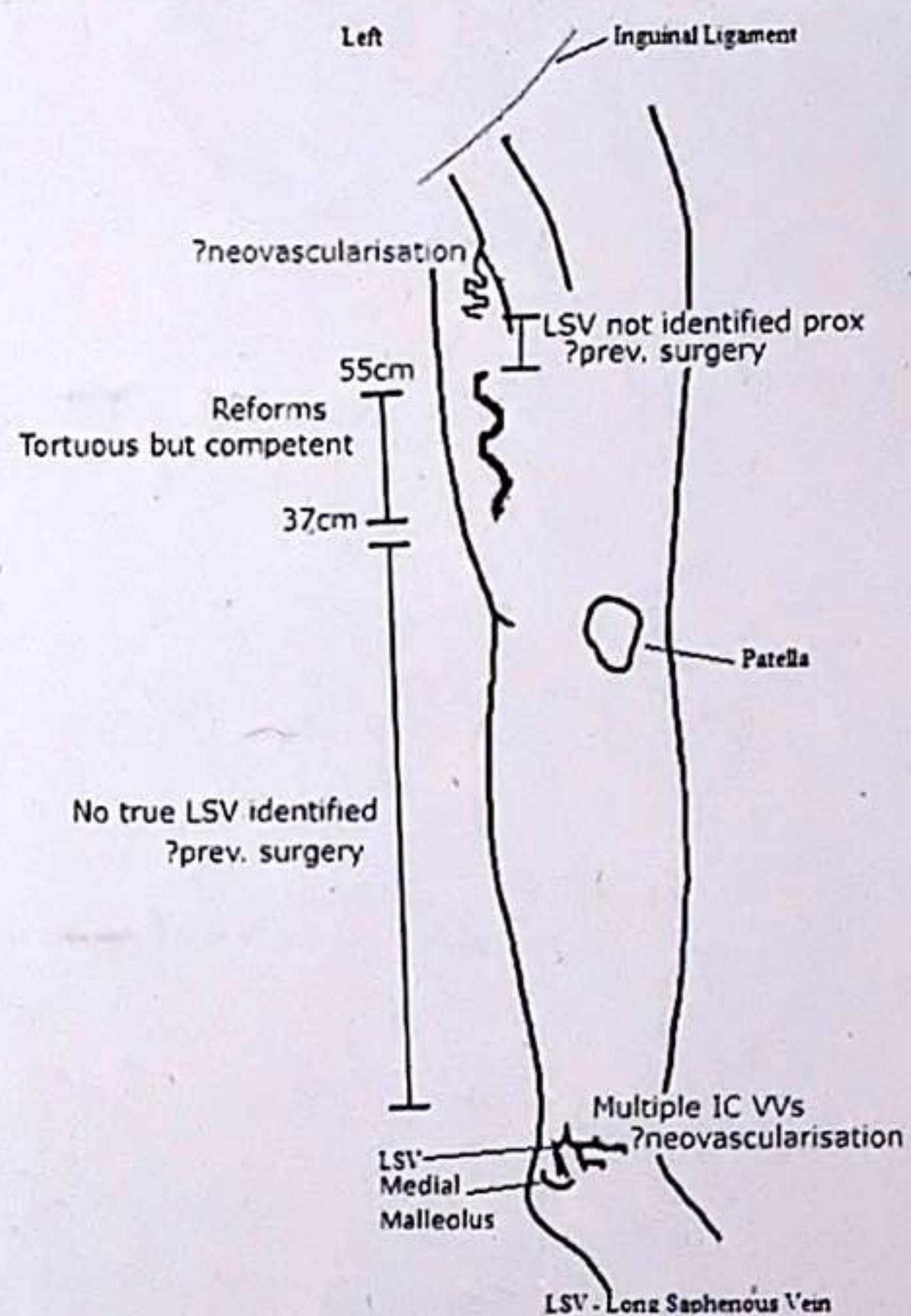
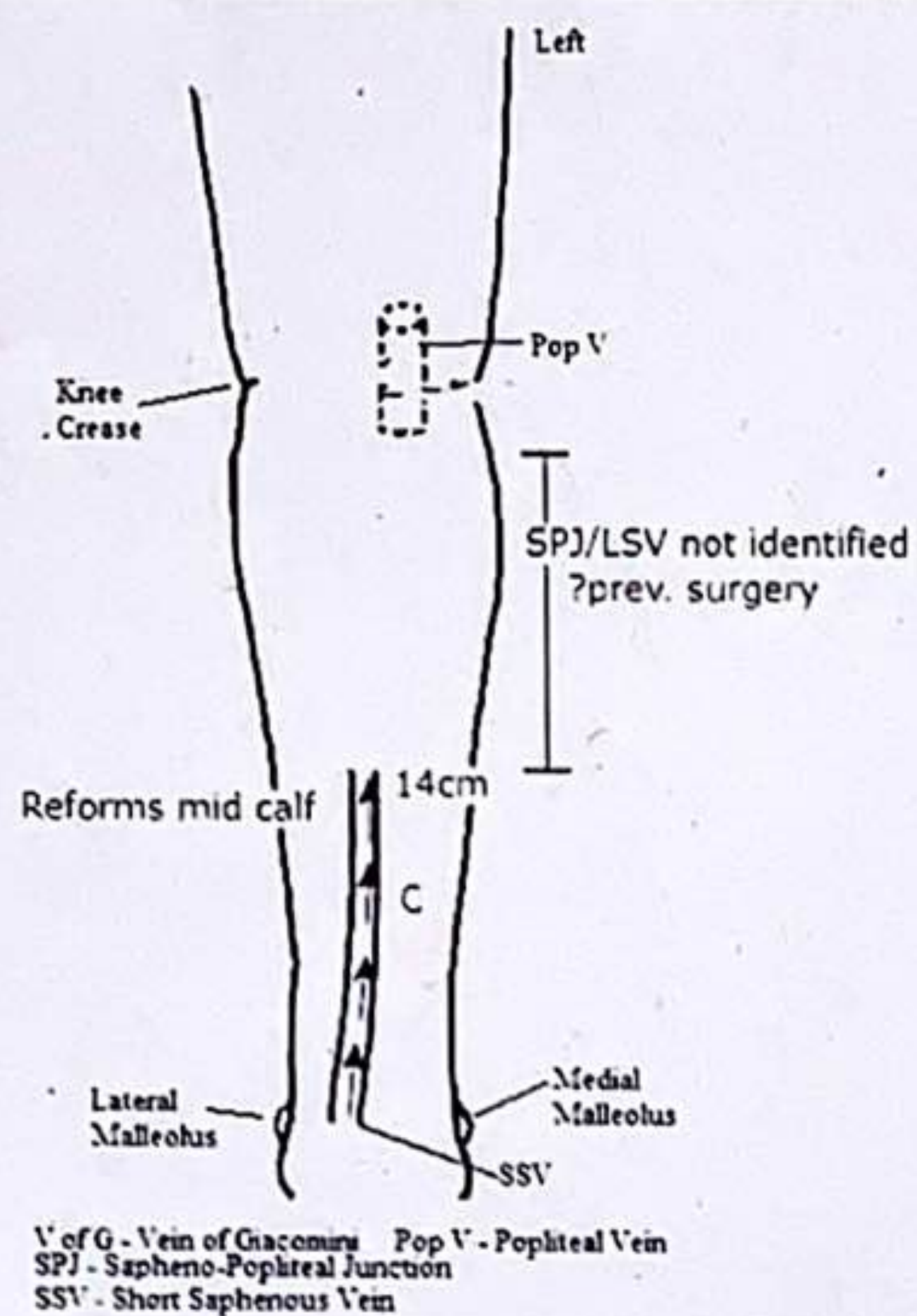
Transverse (AP) dimensions of SSV: Proximal calf - 0.29cm.

LEFT

Sapheno-femoral junction (SFJ) appears highly tortuous ?competency ?neovascularisation. No true proximal LSV identified in the thigh. LSV appears to reform mid thigh (55cm) forming slightly tortuous and competent vessel to the distal thigh. No true LSV identified distal thigh (37cm) to the ankle ?due to previous surgery. Multiple incompetent and highly tortuous varicosities noted distal calf ?neovascularisation. Sapheno-popliteal junction (SPJ) and proximal SSV was not identified ?small calibre vessel. Vessel appears to reform mid calf (14cm) and appears patent and competent to the ankle.

Transverse (AP) dimensions of LSV: mid thigh - 0.41cm.







Reason Varicose vein
Outcome DVT positive - chronic, Superficial thrombophlebitis, Incompetence - deep

	Right		Left	
	Patency	Competency	Patency	Competency
Deep Veins				
Common Iliac Vein			Not Assessed	
External Iliac Vein			Not Assessed	
Internal Iliac Vein			Not Assessed	
Common Femoral Vein			Areas of Thrombus	Old Thrombus
Profunda Vein			Areas of Thrombus	Old Thrombus
Superficial Femoral Vein			Areas of Thrombus	Old Thrombus
Popliteal Vein			Widely Patent	Competent
Posterior Tibial Vein			Widely Patent	Competent
Anterior Tibial Vein			Widely Patent	Competent
Peroneal Vein			Areas of Thrombus	Old Thrombus
Soleal Vein			Widely Patent	
Gastrocnemius			Widely Patent	
Superficial Veins				
Saphenofemoral Junction			Patent	Incompetent
L Saphenous Vein Above			Patent	Incompetent
L Saphenous Vein Below			Patent	Incompetent
Vein of Giacomini			Patent	Competent
Saphenopopliteal Junction			Not Identified	
S Saphenous Vein			Patent	Competent
Evidence of D.V.T.				
Above the knee			Yes	Old
Popliteal			No	
Below the knee			Yes	Old

Notes**LEFT LOWER LIMB VENOUS DUPLEX ASSESSMENT**

Iliac veins not viewed. Flow in the common femoral vein is phasic with respiration and a normal response on Valsalva manoeuvre, suggesting proximal vein patency.

Old non-occlusive thrombus identified in the left common femoral, profunda femoral, and prox-mid superficial femoral veins.

The distal superficial femoral and popliteal vein appear widely patent and are fully compressible.

Old non-occlusive thrombus identified in 1 x mid peroneal vein. All other deep calf veins appear widely patent and are fully compressible.

All measurements are proximal to the medial malleolus unless otherwise stated.

Assessed by David Barrett

Printed on 01/08/2022 at 4:46 pm

Checked by

Sapheno-femoral junction (SFJ) is widely patent and incompetent. Long Saphenous vein (LSV) is widely patent, incompetent and linear in the thigh. Incompetent and tortuous branch noted in mid thigh (63cm from MM) forming medial thigh varicosities.

Incompetent branch noted at the level of the knee crease (35cm from MM) forming medial calf varicosities. The LSV remains incompetent before further incompetent branch noted proximally (29cm from MM) forming visible medial calf varicosities that track anterolaterally. Distal to this branch, minimal area of old non-occlusive superficial thrombophlebitis identified mid calf. Distal to this the LSV appears competent and linear in the mid calf. The LSV then becomes tortuous in mid-distal calf and appears incompetent with multiple incompetent distal branches noted (7cm from MM).

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV/SSV:

Proximal thigh - 0.81cm,

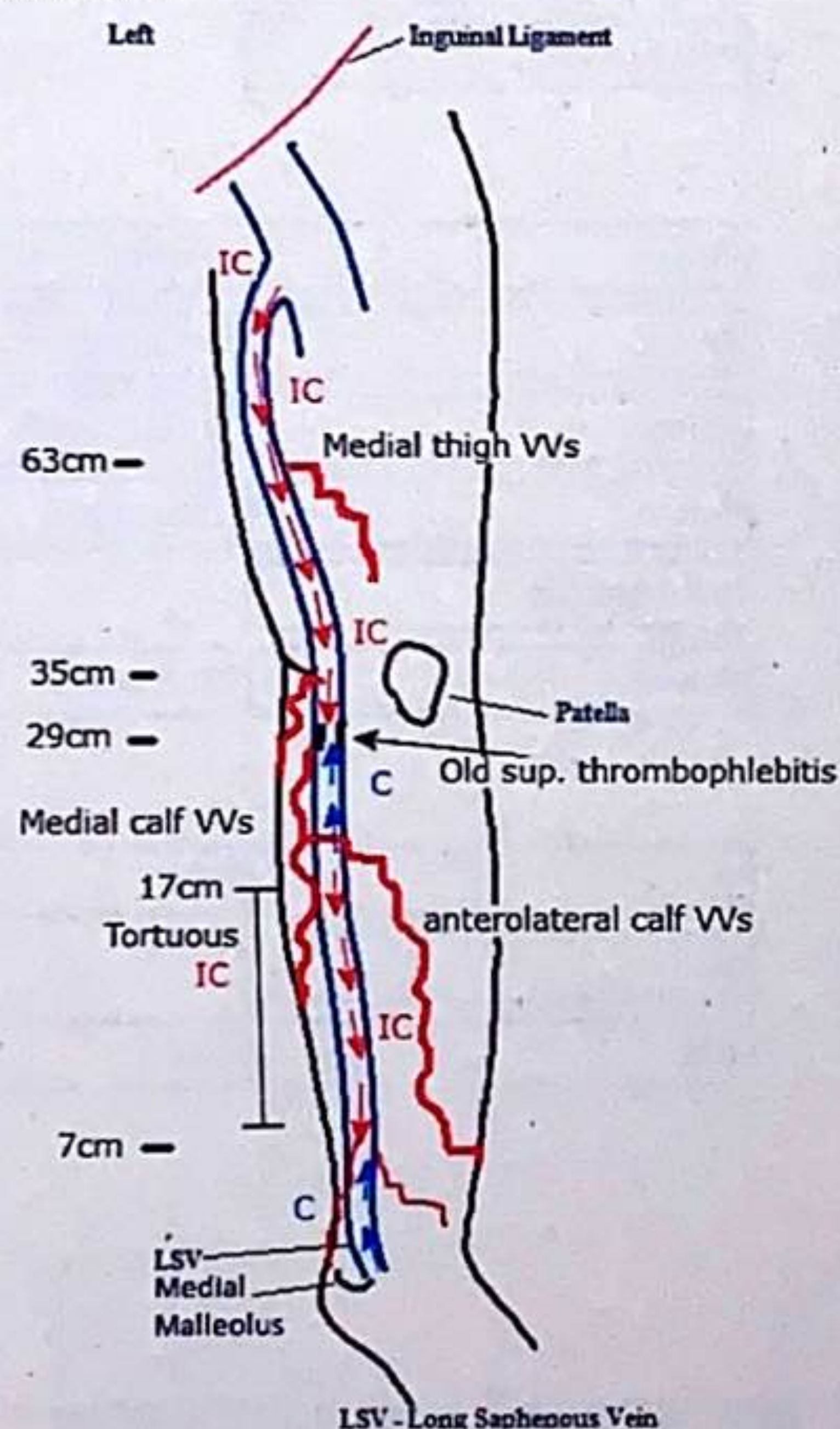
Mid thigh - 0.93cm,

Distal thigh - 0.95cm.

Proximal calf - 0.88cm,

Mid calf - 0.23cm,

Distal calf - 0.24cm.





Reason Varicose vein
Outcome DVT negative, Incompetence - deep

	Right		Left	
	Patency	Competency	Patency	Competency
Deep Veins				
Common Iliac Vein	Not Assessed		Not Assessed	
External Iliac Vein	Not Assessed		Not Assessed	
Internal Iliac Vein	Not Assessed		Not Assessed	
Common Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Profunda Vein	Widely Patent	Competent	Widely Patent	Competent
Superficial Femoral Vein	Widely Patent	Competent	Widely Patent	Competent
Popliteal Vein	Widely Patent	Competent	Widely Patent	Competent
Posterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Anterior Tibial Vein	Widely Patent	Competent	Widely Patent	Competent
Peroneal Vein	Widely Patent	Competent	Widely Patent	Competent
Soleal Vein	Widely Patent		Widely Patent	
Gastrocnemius	Widely Patent		Widely Patent	
Superficial Veins				
Saphenofemoral Junction	Patent	Incompetent	Patent	Competent
L Saphenous Vein Above	Patent	Incompetent	Patent	Competent
L Saphenous Vein Below	Patent	Incompetent	Patent	Competent
Vein of Giacomini	Patent	Competent	Patent	Competent
Saphenopopliteal Junction	Not Identified		Not Identified	
S Saphenous Vein	Patent	Competent	Patent	Competent
Evidence of D.V.T.				
Above the knee	No		No	
Popliteal	No		No	
Below the knee	No		No	

Notes**BILATERAL LOWER LIMB VENOUS DUPLEX ASSESSMENT**

Iliac veins not viewed bilaterally. Flow in the common femoral vein is phasic with respiration and a normal response on Valsalva manoeuvre, suggesting proximal vein patency bilaterally. All visualised deep veins appear widely patent and competent with no evidence of previous DVT bilaterally.

All measurements are proximal to the medial malleolus unless otherwise stated.

RIGHT

Sapheno-femoral junction (SFJ) is widely patent and incompetent. Long Saphenous vein (LSV) is widely patent, incompetent and linear in the thigh and proximal calf.

Assessed by David Barrett

Printed on 01/08/2022 at 4:39 pm

Checked by _____



Incompetent branch noted proximal calf (24cm) forming posterior calf varicosities. Further incompetent branch noted proximal calf (22cm) forming anterior calf varicosities. Distal to this, the LSV appears competent to the ankle, with multiple small branches noted at the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV:

Proximal thigh- 0.55cm,

Mid thigh - 0.45cm,

Distal thigh - 0.43cm.

Proximal calf- 0.36cm,

Mid calf - 0.20cm,

Distal calf - 0.20cm.

LEFT

Sapheno-femoral junction (SFJ) is widely patent and competent. Long Saphenous vein (LSV) is widely patent, competent and linear in the thigh and calf, leaving the fascia in the mid thigh.

Small branch noted proximal calf (25cm) which appears competent and tracks distally to the ankle.

Sapheno-popliteal junction (SPJ) was not identified. Short Saphenous vein (SSV) is competent and is continuous with a competent vein of Giacomini.

Transverse (AP) dimensions of LSV:

Proximal thigh- 0.28cm,

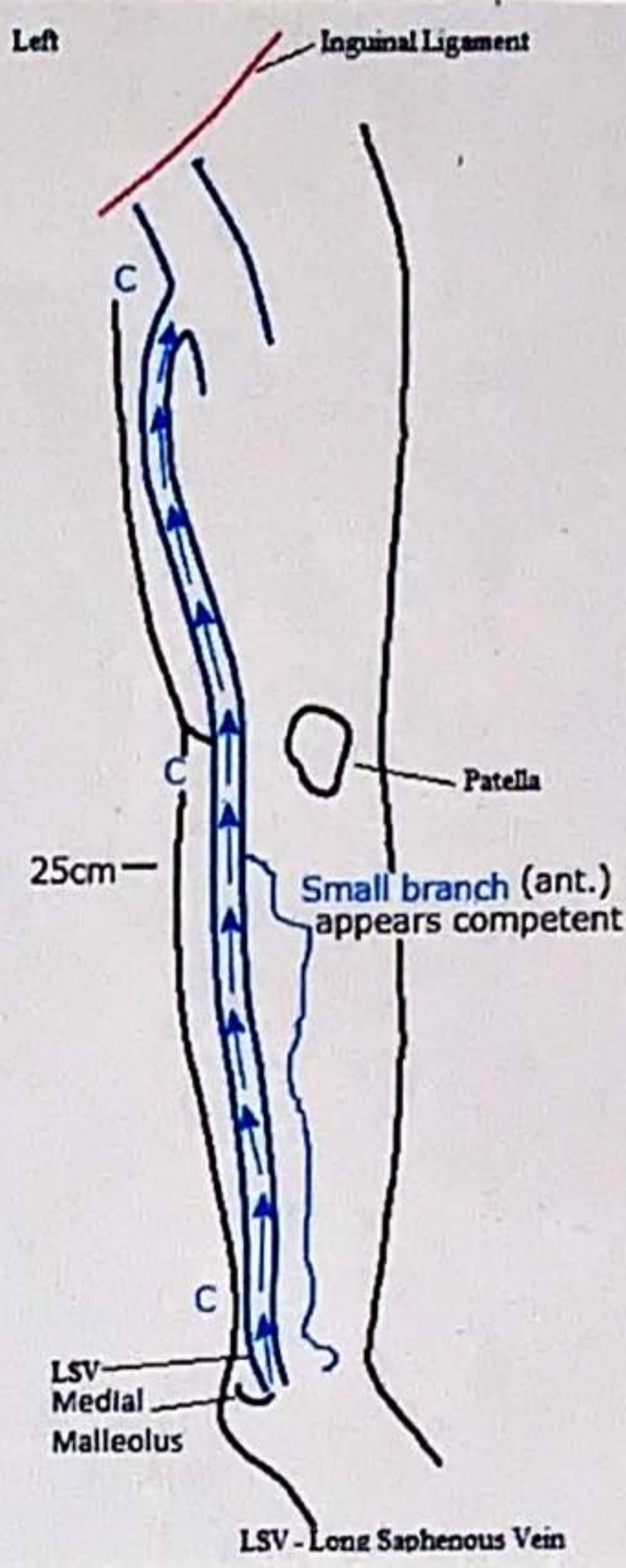
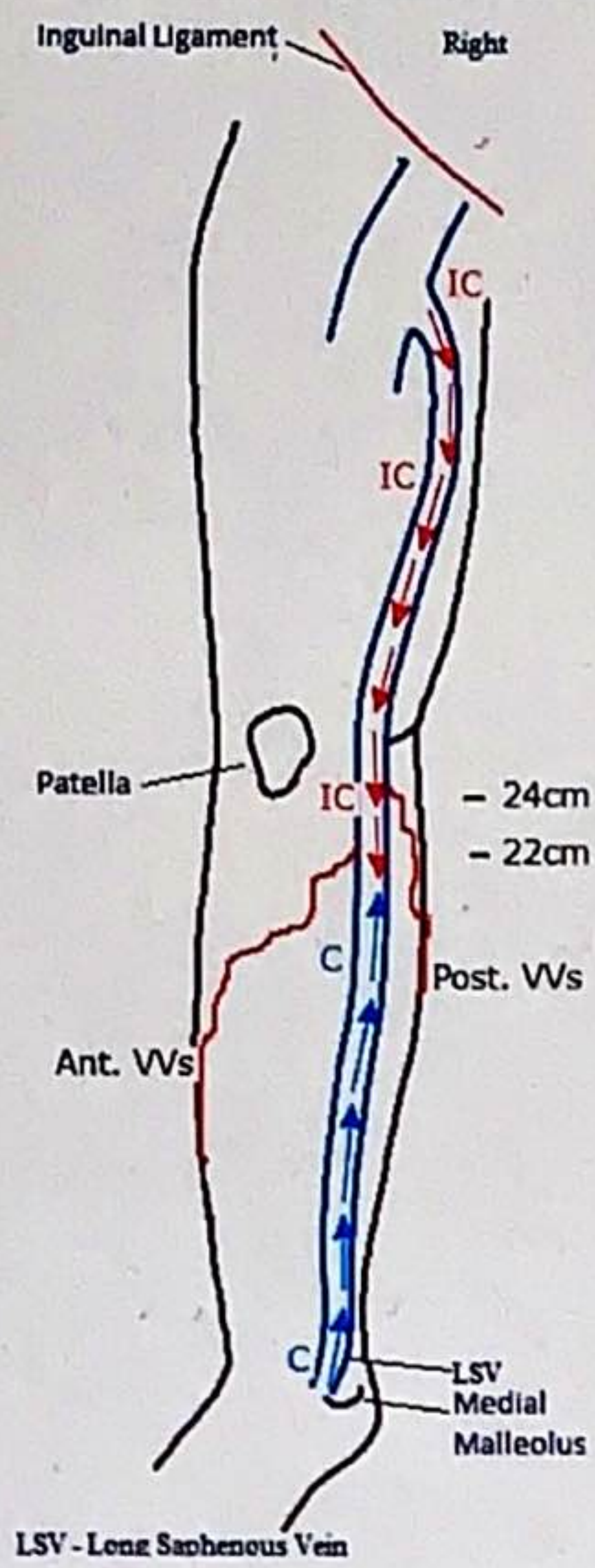
Mid thigh - 0.36cm,

Distal thigh - 0.33cm.

Proximal calf- 0.36cm,

Mid calf - 0.20cm,

Distal calf - 0.23cm.



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CL1.7

7. Lower limb venous duplex assessment

a) General

Where possible, patients are assessed whilst standing, the majority of weight on the contra-lateral limb. The ipsilateral limb should be non-weight bearing to avoid muscular contraction of the veins. The knee should be slightly flexed and the foot turned outwards.¹² For assessment of the popliteal and calf veins, the patient may sit on the edge of the bed placing their foot in the CVS's lap, alternatively their feet may be placed on a raised stool. The thigh should slope downwards avoiding compression from the bed; the knee should be flexed with the calf muscles as relaxed as possible.²

A mid frequency linear array transducer should be used (12-3 MHz linear array) to image the proximal leg and calf veins.¹ A lower frequency curvilinear array transducer (5-1 MHz curvilinear array) should be used if it is necessary to image the iliac veins and inferior vena cava (IVC).¹ An appropriate venous default setting should be selected on the machine to ensure that low venous flow can be detected^{1,3}.

On calf augmentation all veins should fill from wall-to-wall with uniform blue colour. If the vein does not fill wall-to-wall, thrombus may be present. Investigation using different steering angles, lower colour PRF and wall filter settings should be utilised to optimise colourfilling.³ On release of the calf there should be no or very slight (<0.5s) retrograde flow, which indicates no significant reflux disease.⁴ Vein patency or obstruction should also be confirmed by ultrasound compression.¹



b) Deep Venous Thrombosis Assessment (12-3MHz linear array)

The transducer is placed in the groin in transverse plane and the common femoral vein (CFV) is identified medial to the common femoral artery.³

The Doppler sample volume is placed in the CFV, corrected to a 60 degree angle and steered to align parallel with common femoral vein flow. The sample volume gate should span the full diameter of the lumen.^{1,8} Venous flow should be phasic with respiration. The patient is asked to perform a Valsalva manoeuvre, i.e. a cough. If a cough does not produce a satisfactory response, a full Valsalva manoeuvre should be performed.^{1,6} Ask the patient to take a breath in and hold it, then to increase the pressure in their thorax. This is achieved by asking the patient to 'bear down' – pretending to go to toilet.^{1,4} This should result in a temporary reversal of venous flow and indicate patency of proximal veins. With a proximal obstruction, flow in the CFV will be continuous and aphasic with respiration, with poor or no response to Valsalva manoeuvre.¹ If this occurs then the CVS should scan the iliac veins and IVC to assess whether there is a proximal DVT and/or a mass causing external compression of the vein.^{1,5,6}

Following completion of the Valsalva manoeuvre, the common femoral vein should be compressed using external transducer pressure, to confirm patency.¹ Assessment of competency (using colour/spectral Doppler) and patency (using compression) of all other deep proximal veins should be performed as follows. The distal CFV bifurcates into two deep veins. The deeper vein is the profunda femoris vein, the more superficial vein is the superficial femoral vein (SFV). The profunda femoris origin should be assessed whilst the SFV should be assessed along its length, adopting an increasingly antero-medial approach.^{2,5} The popliteal vein is located within the popliteal fossa – care should be taken to scan as proximally as possible to overlap with the distal SFV.¹

Manual compression of the deep veins should be repeated at regular intervals (2-3cm); failure to fully compress the veins may indicate the presence of thrombus.² The echogenicity of the thrombus indicates its age.¹¹ Thrombus becomes increasingly echogenic over time, as it becomes more organised.¹ In time, the vessel may begin to re-canalise – old residual thrombus can be seen to produce a scarred appearance, with multiple channels of flow seen.¹ Slow or partial re-canalisation can result in deep venous insufficiency.¹ Competency is assessed by calf augmentation using both colour and spectral Doppler - on release of the calf there should be no or very slight (<0.5sec) retrograde flow, which indicates no significant reflux.⁴

Deep calf veins should be assessed using manual compression, colourflow and spectral Doppler to assess competency. The transducer is placed into the popliteal fossa and the popliteal vein is identified lateral to the mid line. Up to eight gastrocnemius veins may be visualised in the proximal calf, within the gastrocnemius muscle.² The soleal veins are imbedded in the soleus muscle and are often less easily identified. Several soleal veins may be present which may have connections with other deep calf veins – often the posterior tibial or peroneal veins. Soleal veins are identified more distally than the



gastrocnemius veins.² If gastrocnemius or soleal veins appear particularly dilated, they should be assessed for competency using colour/spectral Doppler.

The anterior tibial veins may be seen as the first deep communication with the popliteal vein. Distal to this junction the tibio-peroneal trunk veins divide to form the posterior tibial and peroneal veins.^{1,12} It is sometimes easier to trace the deep calf veins from the ankle proximally. Placing the transducer posterior to the medial malleolus, both posterior tibial veins can be visualised adjacent to the posterior tibial artery.² If the probe is angled slightly posteriorly the peroneal artery and veins should be visualised deep to the posterior tibial vessels.² Placing the transducer on the anterior aspect of the ankle, the anterior tibial artery and veins can be visualised and traced.¹⁴ Placing your thumb and first finger on the antero-medial or antero-lateral aspects of the ankle and applying pressure can augment flow in posterior tibial, anterior tibial and peroneal veins in order to assess competency.^{1,2}

When a DVT scan is requested the LSV, SSV and their junctions with the deep venous system should be assessed for superficial thrombophlebitis and obvious signs of incompetence.^{1,2,11} If the LSV is incompetent within 0.5cm of the SFJ, it is assumed that the SFJ is slightly incompetent even if no reflux is seen in the CFV.

Differential diagnoses of clinical DVT include (but are not limited to): Bakers cysts, superficial oedema, cellulitis, lymphoedema, thrombophlebitis, popliteal arterial aneurysms and superficial venous incompetence. If you identify an abnormal lesion during the course of your scan, note site, dimensions and descriptive information.

Rescan Policy

In some situations it is difficult to be certain that a vein is patent along its length. In such cases we state that we are "unable to fully exclude a DVT". The scan is equivocal and upon the clinicians discretion usually requires a rescan 6-8 days later to check for DVT progression.² Local protocols differ slightly as below:

Oldham/NM: The patient is brought back to have a further scan following an equivocal result. The equivocal vein and up to the popliteal vein is rescanned assessing for progression of the potential DVT.

South Manchester/Bury/Stepping Hill: The patient is brought back to have a further scan following an equivocal result. The symptomatic leg is fully rescanned from the CFV to ankle.

Bolton/Blackpool/Arrowe Park/NC: The patient is brought back to have a further scan following an equivocal result. The symptomatic leg is rescanned from the CFV to popliteal vein only, assessing for progression of the potential DVT in line with NICE guidelines

SM – Additional information



Beacon Pathway patients:

Negative DVT – Prepare IVS report, give report the patient in an envelope AND fax report to Beacon office using pre-set fax number, patient can go home.

Positive below the knee (distal to popliteal) - Prepare IVS report, give report the patient in an envelope AND fax report to Beacon office using pre-set fax number, patient can go home.

Positive DVT knee level and above – Prepare IVS report, fax report to Beacon office using pre-set fax number, discuss with patient that they have to attend AMRU for clinical follow up and treatment.

North Cheshire – Additional Information

IVS staff are required to verbally give the patient their result to facilitate the patients' progression through the DVT pathway. This is confined to a confirmation of whether the result is POSITIVE, NEGATIVE or EQUIVOCAL and does not require the vascular scientist to engage the patient in any further discussion about the result, further testing or prophylactic treatment (i.e. heparin injections). The appropriate letter should be given to the patient for their information following the scan as outlined below:

For inpatients, put a copy of the report into the patient notes & scan a copy to CRIS. No letter needed.

For A&E/GP/outpatient referrals:

If **negative** result, give a copy of the appropriate DVT negative letter (available in the scan room) to the patient. Scan a copy of the report to CRIS. No further action is needed.

If **positive** – send patient to the DVT clinic in Ambulatory Care Unit – Ground Floor (located near GP out of hours). Patient is to sign a copy of DVT positive letter (available in scan room) which can be scanned into CRIS documents. Patient to then take copy of letter to DVT clinic.

If **equivocal** – Patient is to sign a copy of DVT two-part scan letter (available in scan room) which should be scanned into CRIS documents. Patient can go home - no further action is needed. General ultrasound admin staff will arrange a follow-up appointment.

For pregnant patients referred for ?PE – patient is to return to DVT clinic regardless of result.

Stepping Hill – Additional Information

DVT referrals can be accepted from HASU (ED or A10) or the rapid access stroke clinics to aid patient flow through the ward/clinic. The patients are sent back to the ward/clinic with the result and the ward/clinician is informed of an equivocal result so that the patient can be brought back in a week for a rescan. The ward or clinician in clinic should arrange this and send us a repeat referral.

c) Varicose Vein Assessment

A full DVT scan is performed, as per the above protocol. Evidence of deep venous insufficiency and previous DVT should be clearly noted in the report. The superficial system should be assessed as below:

Long Saphenous Vein

Moving distally along the common femoral vein, the long saphenous vein (LSV) will appear as a superficial medial branch. Assessment of competency at the level of the sapheno-femoral junction (SFJ) should be performed by calf augmentation using colour/spectral Doppler.¹ If the LSV is incompetent within 0.5cm of the SFJ, it is assumed that the SFJ is slightly incompetent, even if no reflux is seen in the CFV. The (LSV) should be traced along its length in longitudinal and transverse planes, as isolated segments of incompetence may be identified. Any incompetent branches/perforators should be noted.²

Short Saphenous Vein

The short saphenous vein (SSV) is identified in the upper calf and traced distally to ensure that it remains within the fascia into the lower calf. The SSV is checked for competency and patency and then traced proximal to its junction with the popliteal vein.¹⁰ Any incompetent branches/perforators should be noted.² In the presence of SSV incompetence, the popliteal vein must be viewed proximal and distal to the sapheno-popliteal junction (SPJ) to determine whether the junction is incompetent.¹ In some cases an SPJ may not be identified and/or the SSV may communicate with the vein of Giacomini which lies just beneath the fascia and extends into the proximal posterior thigh and may connect to the LSV.¹²

If the SPJ is incompetent, then its location needs to be recorded – the distance measured proximal to the knee crease and lateral/medial to the mid line.^{2,5}

The distance of any incompetent perforators from the medial malleolus should be noted and marked if the patient is undergoing superficial venous surgery.²

Table: Grading of incompetence.¹

Grade	Reflux Duration
Normal	<0.5 seconds
Slightly Incompetent	0.5 – 1.0 seconds
Incompetent	>1.0 seconds

Primary Varicose Vein Protocol

The Vascular Consultant will review patient referral letters and specifically request the limited protocol outlined below.¹³

The protocol should be used in conjunction with the Section 5 'Lower limb venous duplex assessment' from 'Protocols for non-invasive and minimally invasive



assessments' for explanation of patient positioning probe, colourflow and Doppler settings.²

1. Assess common femoral vein for patency and competency.¹
2. Comment of absence or presence of sapheno-femoral junction (SFJ) and its competency.²
3. Comment on absence or presence of long saphenous vein (LSV) and its competency.¹³
4. Comment on the absence or presence of anterior or posterior veins which form junctions to the LSV within 3cm of the SFJ, measure the distance of the junction to the SFJ, and comment on the competency of the vein.^{2,13}
5. If an incompetent thigh vein is identified but the SFJ is absent, the position the vein reforms should be identified and measured and any incompetent thigh perforators identified and measured.¹⁷
6. Assess popliteal vein for patency and competency.^{2,13}
7. Comment of absence or presence of sapheno-popliteal junction (SPJ) and its competency.¹
8. Comment on absence or presence of short saphenous vein (SSV) and its competency.^{2,13}
9. Incompetent thigh veins and SSV should be assessed for suitability for EVLT or VNUS as per full EVLT protocol (see copy below).
10. All other deep veins do not need assessment unless there is evidence of thrombus in the common femoral or popliteal veins.¹⁴
11. Calf perforators do not need to be assessed or measured.^{2,13}

Patient will be reviewed by the Vascular Consultant and if necessary referred for full Venous duplex protocol.

Endovenous Laser Treatment/ VNUS protocol

The inclusion criteria are as follows:

1. The LSV needs to follow a relatively straight course; it will be difficult to pass the laser up a tortuous vein. If the LSV leaves the fascia or becomes tortuous state the distance from the medial malleolus and also comment on general position.
2. It needs to be checked whether the LSV is bifid – both veins can be treated providing they are of suitable diameter.
3. The vein diameter (AP) needs to be measured at the junction, mid-thigh, knee level and the minimum diameter stated. If the LSV dilates make another diameter measurement and its distance from medial malleolus.
4. Need to ensure LSV is widely patent – no evidence of recent/old thrombophlebitis.
5. Any incompetent branches close to the SFJ need to be measured. If there is an incompetent branch less than 1-1.5cm from the SFJ then the patient will not be suitable for EVLT. Other major branches should also be identified.
6. Redo LSV's can be retreated with the laser if they are of a suitable diameter so provide measurements as above. State whether there is an intact/reformed SFJ or not.

7. As with all superficial venous procedures the whole deep venous system needs to be competent and patent (Except for simple varicose vein assessments, where the patency and competency of the CFV and popliteal vein only need to be checked).
8. Incompetent thigh accessory veins can be treated with EVLT/VNUS. Minimum and maximum diameters of these veins must be recorded, and if they exit the fascia, the approximate treatable length should be measured (from the SFJ to point at which they leave the fascia).

d) Venous marking

The patient should be asked to point out the major varicose veins or where they feel discomfort.¹⁴ Under direction of the patient any obvious varicosities should be traced to their junctions with the major venous branches and marked. Any perforators should be marked. The sapheno-femoral and sapheno-popliteal junctions should be marked if incompetent.¹⁵

When marking the SPJ or perforators prior to surgery you need to ensure the mark is directly above the structure of interest.^{2,15} In the longitudinal section, move the leading edge of the probe so the structure is just off the screen and mark either side of the leading edge.¹ In TS, again move the leading edge so the structure is just off the screen and mark the skin on the upper edge of the probe.^{1,15} This should result in three marks on the skin surface and where the imaginary lines bisect marks the structure. Extend the dots towards the bisecting point but do not join up as the permanent ink has been known to tattoo the skin during surgery. The final mark should resemble an upside 'T' without a connecting section.^{2,15}

e) Long (LSV) and short saphenous vein (SSV) mapping, 12-3MHz probe

In some cases of lower limb bypass surgery the saphenous veins are used as the conduits. Surgery that uses an autogenous vein can be greatly aided by a detailed preoperative venous assessment.^{2,15} Patient is assessed, when possible, in a standing position or sitting to facilitate maximum filling of veins.¹ The LSV or SSV are identified, (outlined above in "venous duplex assessment") and traced along their length in L.S. and T.S. to confirm patency and compression should be used to exclude thrombus/incompetency.¹⁴

In transverse section – A.P. diameters are measured in the proximal, mid and distal thigh for the LSV, and proximal, mid and distal calf for the LSV and SSV. In transverse section the probe is moved so the vein is just off the edge of the screen (ensuring probe is perpendicular to vessel) and marks are made along its length using the indelible pen to map out the vein.^{1,2,16}

The course of the vein is marked on leg, allowing improved use of veins and better planning of the specific surgical approach. It minimises the dissection and reduces the frequency of wound complications.¹⁵

To be suitable as a bypass the vein has to be greater than 0.30cm and not varicose, thrombosed or tortuous.^{2,15}



A full length review of the LSV will be produced with the tributaries marked and specific measurements recorded;

Vessel Inner Diameter (These will be recorded at 6 specific points)

Proximal Thigh, Mid-Thigh, Distal Thigh, Proximal Calf, Mid Calf, Distal Calf

Varicosities/Tributaries (including perforators)

The location and number of tributaries and possible varicosities will be marked and recorded.

Intramural Thrombus

The presence and location of any intramural thrombus will be noted.

Total usable length

The total usable length will be recorded based on a diameter greater than 0.3 cm and is measured from the sapheno-femoral junction.

Depth from skin surface

The depth from the skin surface will be marked.

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