



Lymphatic Microsurgical Preventive Healing Approach (LYMPHA) for Lymphedema Prevention Following Groin Dissection in Vulvar Cancer- A Case Series.

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BACKGROUND

- Inguinofemoral lymphadenectomy (IFLN) is associated with a high risk of lymphorrhoea, seroma formation and lower limb lymphedema.
- Performing multiple lymphatic-venous anastomoses (LYMPHA) after lymph node dissection has shown potential in reducing this risk.
- The LYMPHA technique aims to prevent lymphedema by establishing alternate lymphatic drainage pathways immediately following lymphadenectomy.

METHODS

Five patients with squamous cell carcinoma vulva requiring IFLN dissection underwent the procedure.

PROCEDURE:

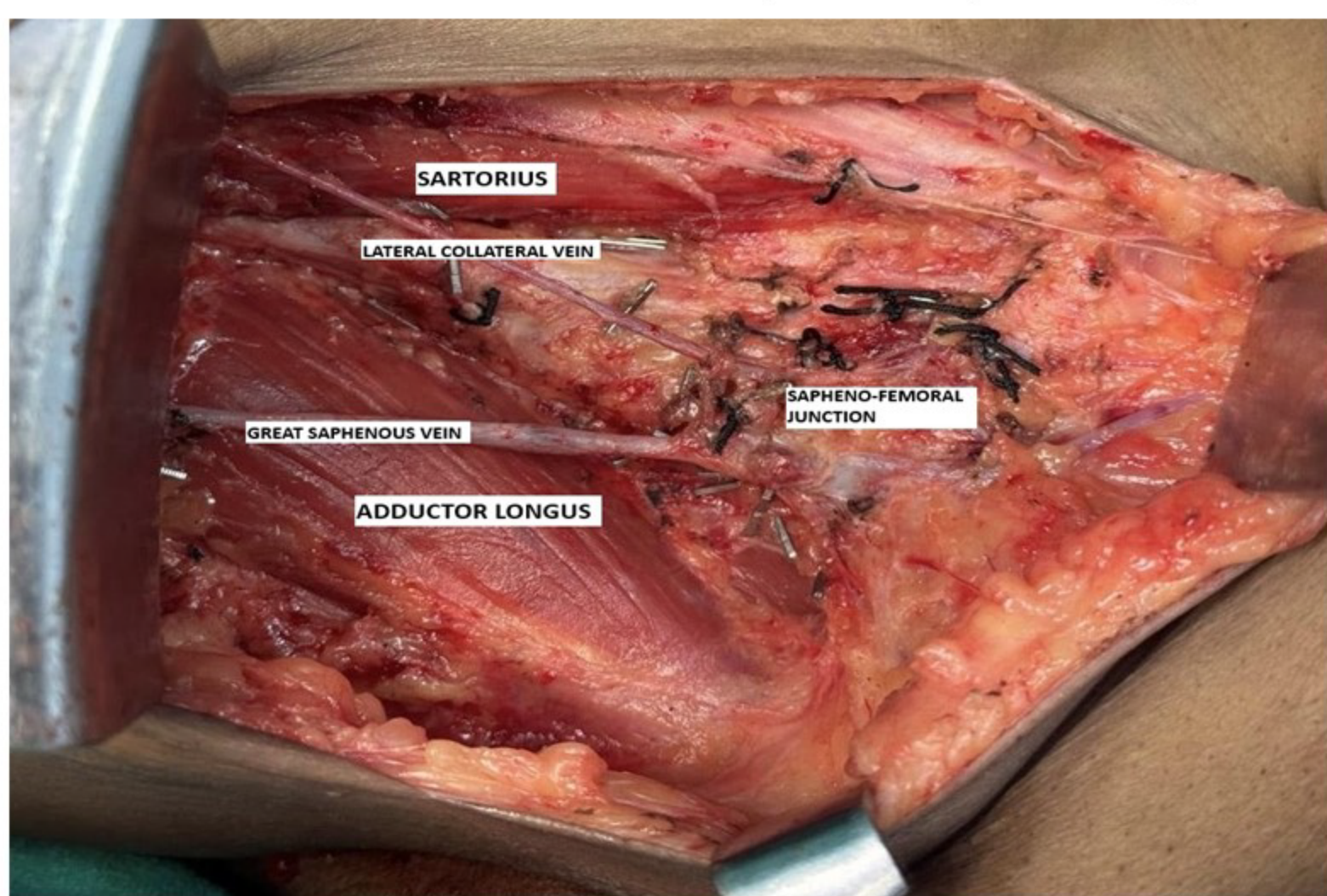
Pre-operatively:

- Measurements taken at 5 points. Three bony landmarks- lateral malleolus, lateral epicondyle and greater trochanter marked.
- Three points below knee - two points dividing the lower limb in equal one-thirds, another point above the malleolus.
- Two points above knee - dividing the thigh in equal one-thirds (as shown in picture).

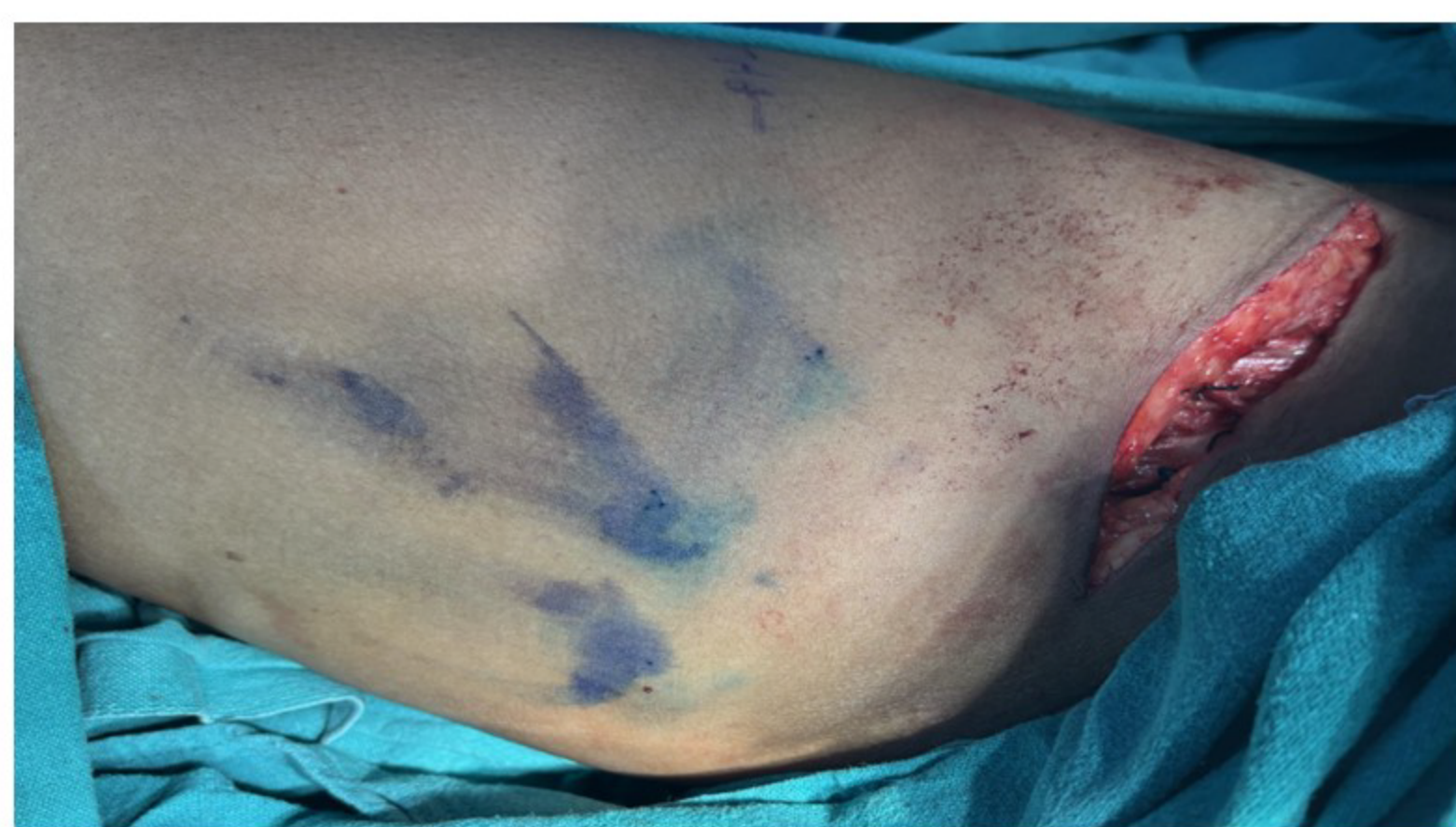


Intra-operatively :

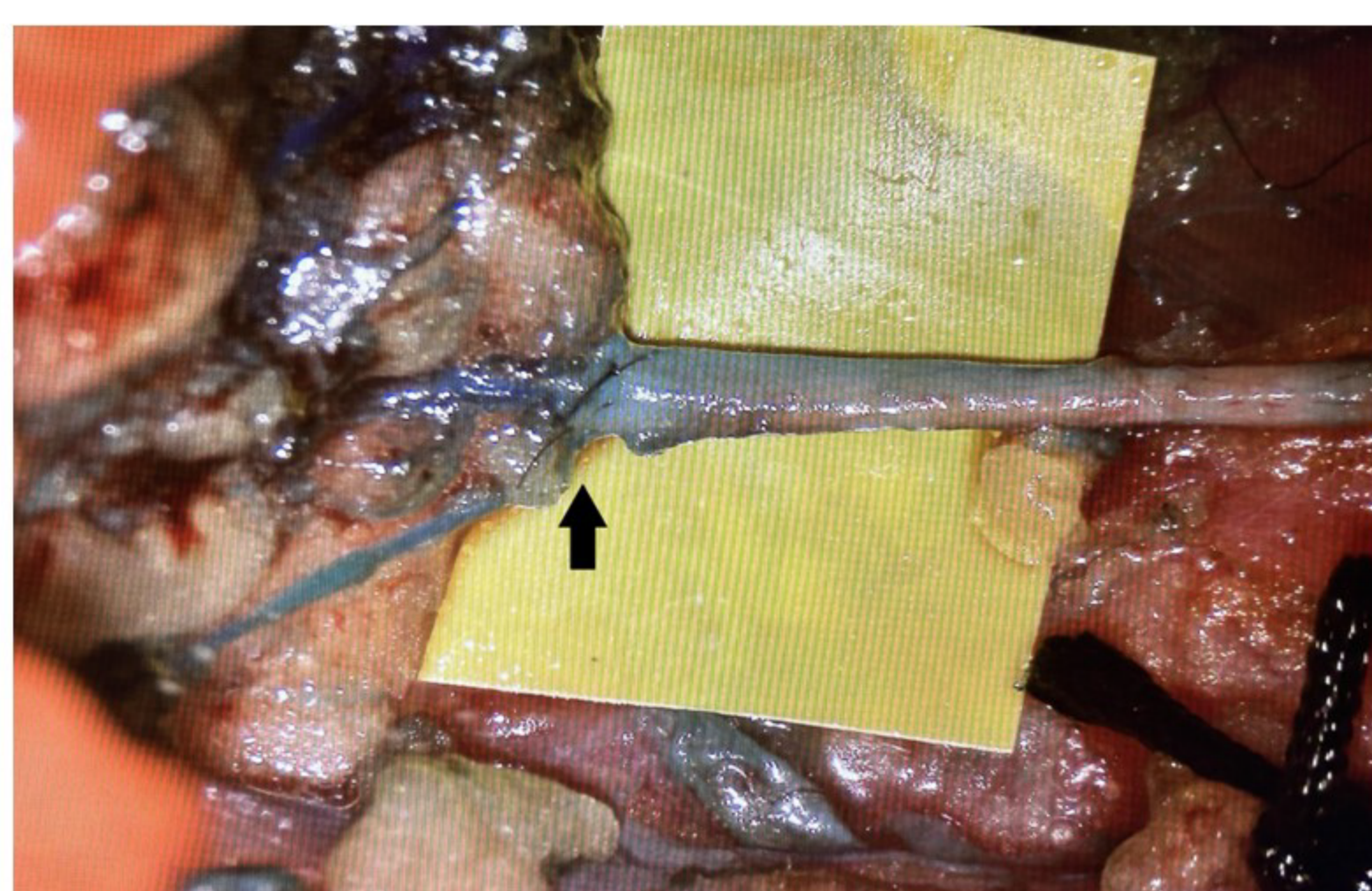
- During the procedure of IFLN dissection, great saphenous vein and its tributaries (lateral and medial accessory veins) were preserved.



- 1ml of blue dye was injected into the medial aspect of thigh at 3 points to identify lymphatic afferents.
- These lymphatics were then used to perform multiple lympho-venous anastomoses (MLVA) with a collateral branch of the great saphenous vein, specifically the lateral accessory saphenous vein.

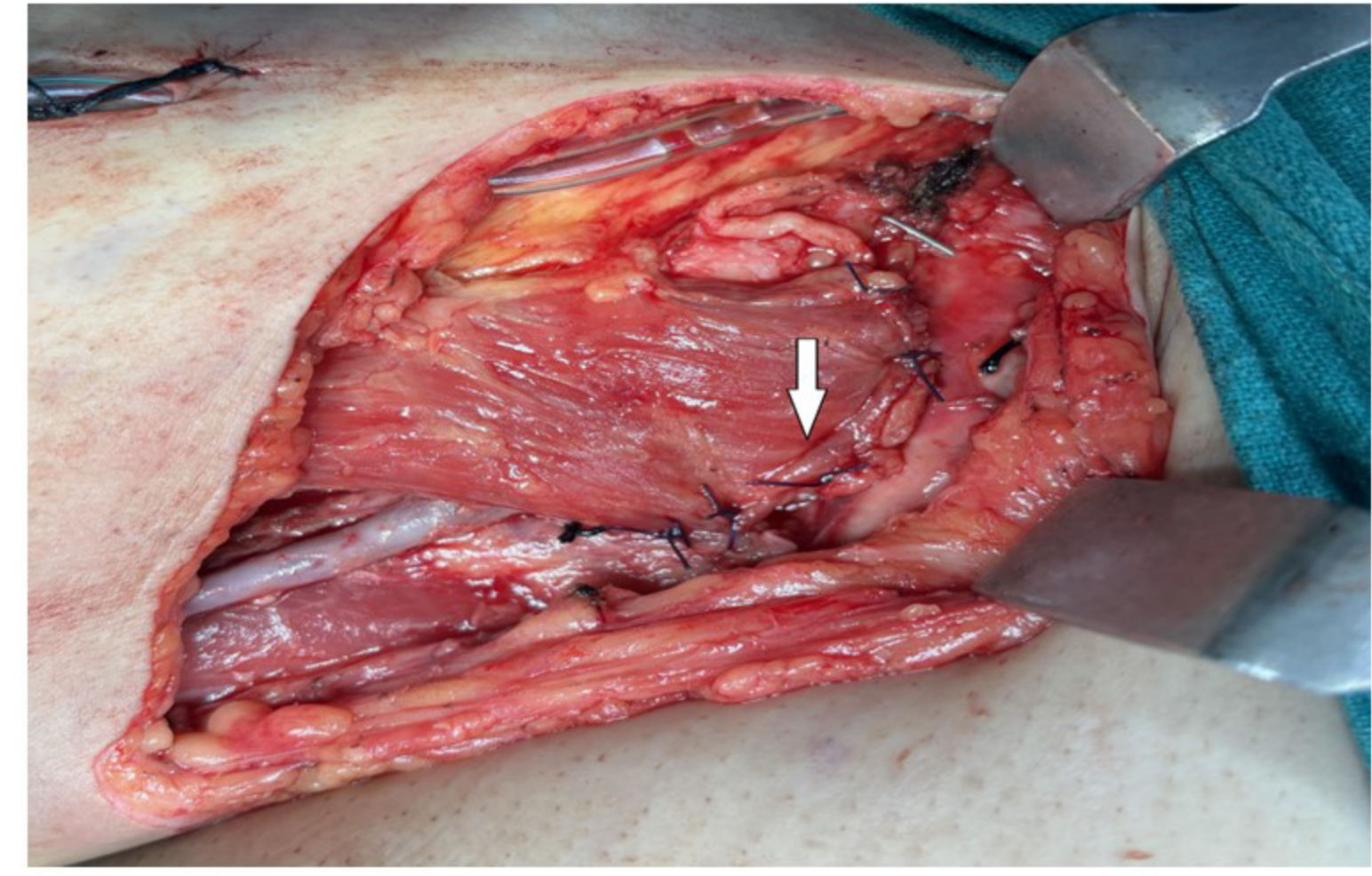


- The MLVA was carried out by a microsurgical technique using an 8-0 nylon suture to perform an arm- sleeve shaped procedure consisting of pulling lymphatics into the vein cut end by a U-shaped stitch.
- A few more stitches were put between the lymphatic adventitia and the vein wall.



- Patency of the microanastomosis was confirmed by the passage of blue dye into the vein branch.
- 2-4 lymphatic vessels anastomosed per side in each patient.

- Hemostasis was achieved and sartorius transposition was done to cover femoral vessels.



- Patients were followed up every 3 months and data has been collected for up to 6 months. Limb circumferences were compared to pre-op measurement and data was recorded.

RESULTS

The LYMPHA technique was performed in 5 patients (10 groins).

- The average duration of surgery (bilateral IFLN dissection + bilateral LYMPHA) was 173 minutes (160-188).
- The average total blood loss was 50 ml.
- The average number of lymph nodes removed was 13.5 (8-18) in each groin.
- In 7 cases- lateral accessory vein (LAV), 2 cases- medial accessory vein (MAV) and 1 case- superficial circumflex vein (SCV) was used for MLVA.
- In 8 groins, the procedure was successful, with a reduced average daily drain output (15 ml vs. 150 ml) and drains being removed by postoperative day 10-12. No seromas developed after drain removal.
- In remaining 2 cases, average drain output was 150 ml and drains were removed on 30th and 35th day. One patient underwent reinsertion of drain on POD 40 due to seroma formation*.
- Adjuvant treatment was started on 25th and 35th day in two patients.

In the follow-up period, Lower limb circumferences remained stable in all 8 successful cases, while a 25% and 30% increase was noted in the groins where it was unsuccessful,.

	PATIENT 1		PATIENT 2		PATIENT 3		PATIENT 4		PATIENT 5	
	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
Duration of surgery (in min)	170		160		180		168		188	
Blood loss (in ml)	60		45		40		50		55	
Number of lymph nodes retrieved	12	15	10	8	17	18	16	15	13	11
Number of positive lymph nodes	0	0	0	0	0	0	3	0	0	4
Vein used for LYMPHA	LAV	LAV	MAV	LAV	LAV	LAV	LAV	MAV	SCV	LAV
Interval to start adjuvant treatment	NA		NA		NA		POD 25		POD 35	
Average daily drain output (in ml)	20	20	15	10	10	180	15	20	15	120
Day of drain removal	10	10	12	12	10	35*	10	10	12	30
Difference in circumference (comparing with day 0)	At 3 months		None		None		+25 %		None	
	At 6 months		None		None		+22 %		None	

CONCLUSION

- Our experience suggests that the LYMPHA technique is a safe, feasible and effective method to prevent lymphedema following inguinofemoral lymph node dissection.
- It holds promise for improving patient outcomes, reducing healthcare costs and enhancing quality of life by minimizing postoperative complications without compromising the adequacy of surgery and not causing any delay in adjuvant treatment.

REFERENCES

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- Boccardo F, Dessalvi S, Campisi C, Molinari L, Spinaci S, Talamo G, et al. Microsurgery for groin lymphocele and lymphedema after oncologic surgery. Microsurgery. 2014;34:10-3.