

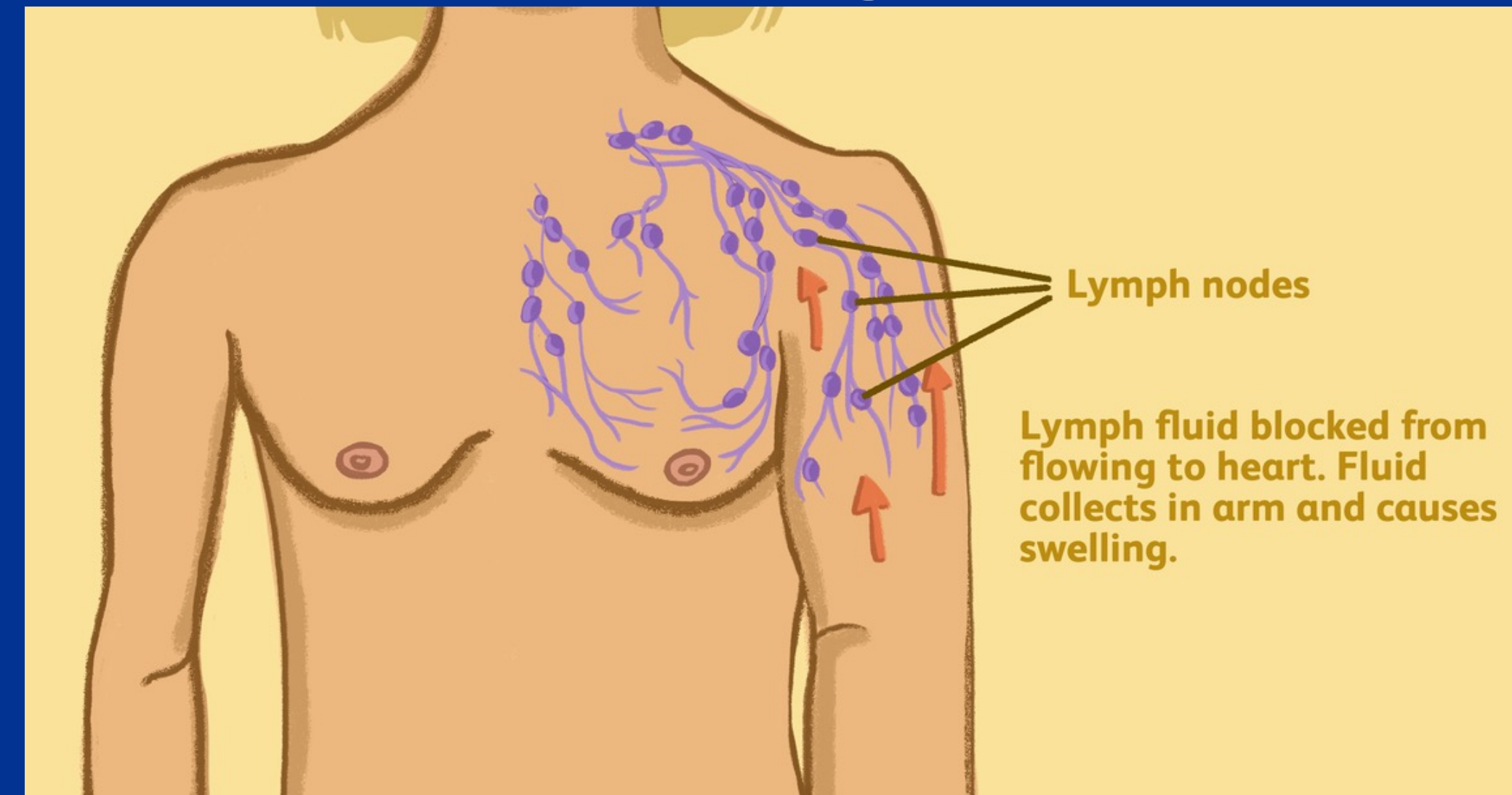
Differentiating Afferent Lymphatic Pathways Using Dual-Dye Technique During Immediate Lymphatic Reconstruction

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Background

Breast Cancer Related Lymphedema

- Post surgical **lymphedema** Effects approximately **33%** of patients receiving **ALND** and radiation



Reverse Lymphatic Mapping

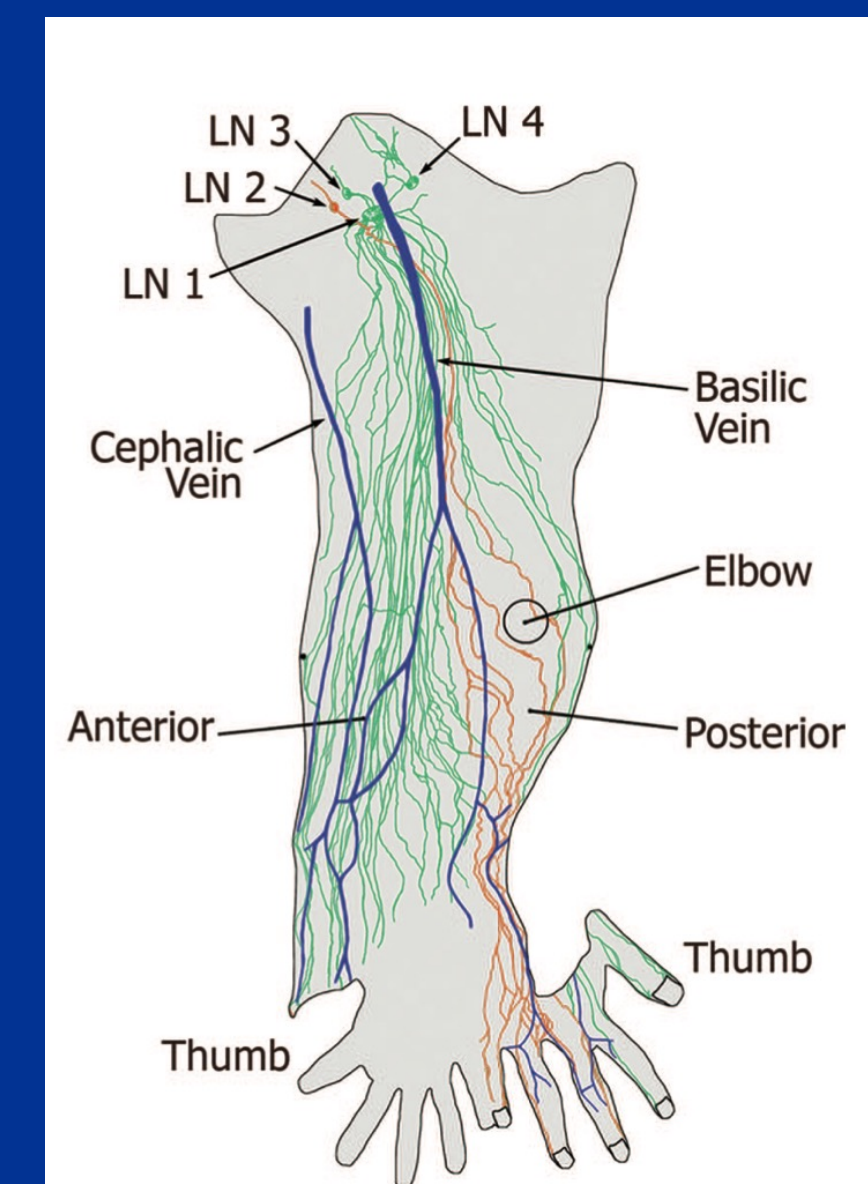
- Use of **isosulfane blue (ISB)** to locate lymphatic structures and avoid damage

Immediate Lymphatic Reconstruction (ILR)

- Preventative lymphatic reconstruction with microsurgical anastomosis of the cut **lymphatics to a neighboring vein**
- Commonly use **indocyanine green (ICG)** and florescent lymphography

Lymphosomes

- Regional drainage** to a shared lymph node basin
- Tracking of lymphatic drainage to **individual lymph nodes**



Aims

Describe benefits of utilizing **indocyanine green (ICG)** and **Isosulfan Blue (ISB)**

Differentiate lymphatic **drainage** from the **proximal and distal lymphosomes** of the upper extremity

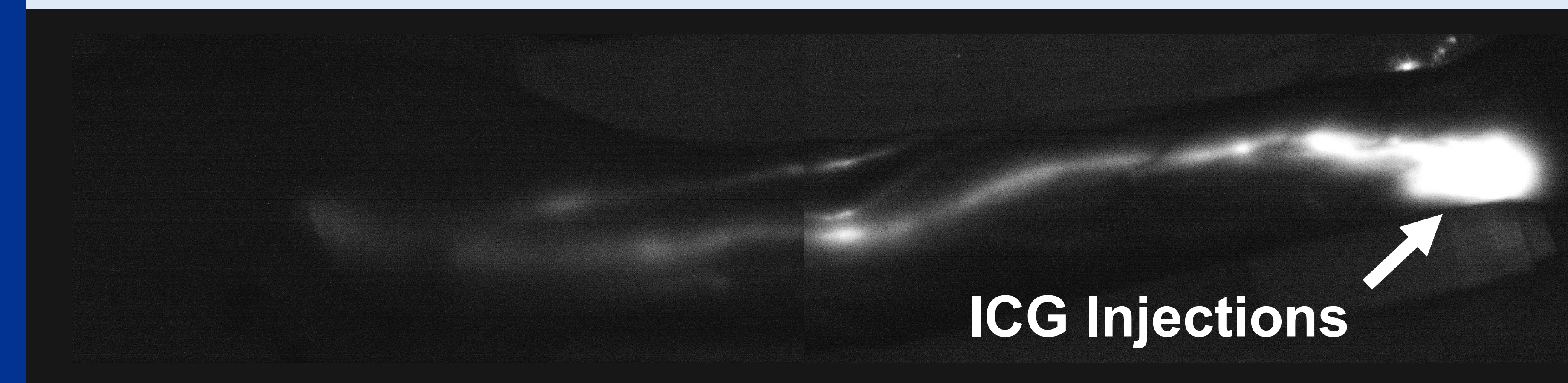
Study Design

Dual-Dye Imaging Technique

Injection points

ISB – medial intramuscular groove

ICG – first and third webspace, volar wrist

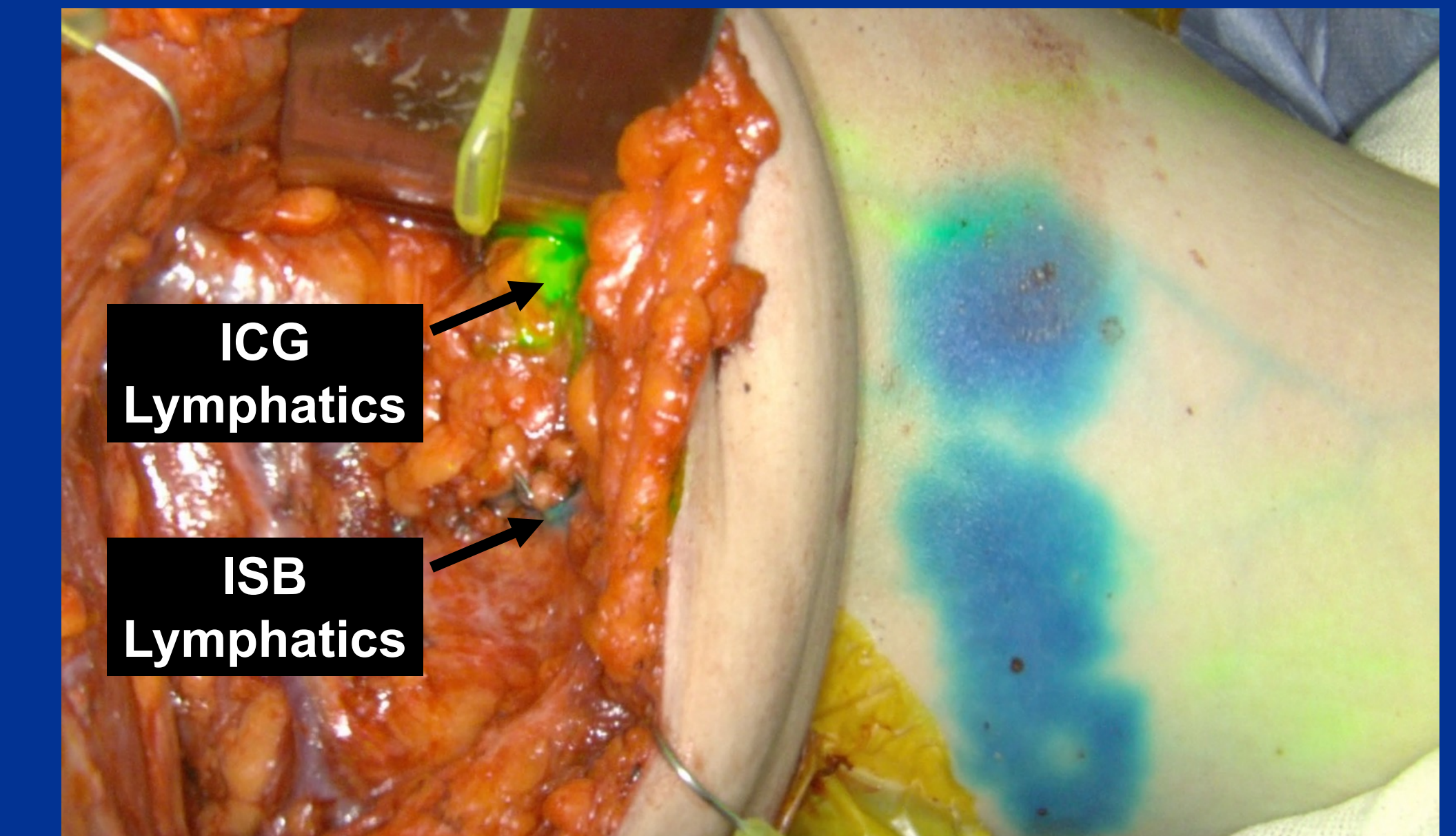


Lymphatic Drainage Assessment

Inclusion criteria:

Breast cancer patients, receiving axillary dissection and subsequent ILR

Asses **distal (ICG)** or **proximal (ISB) drainage** into axilla



Lymphosome Drainage Results

26 breast cancer patients underwent ILR, **21 with dual dye**

ICG (drainage from the distal extremity)

- Seen in **100% of patients**

ISB (drainage from the proximal extremity)

- Seen in **61.9% of patients**

Conclusions

Proximal and distal lymphatic channels show alternate drainage into the axilla.

Dual-dye allows for visualization of axillary lymphatic drainage by the breast and micro surgeon.

ICG is more reliable and identifiable.