

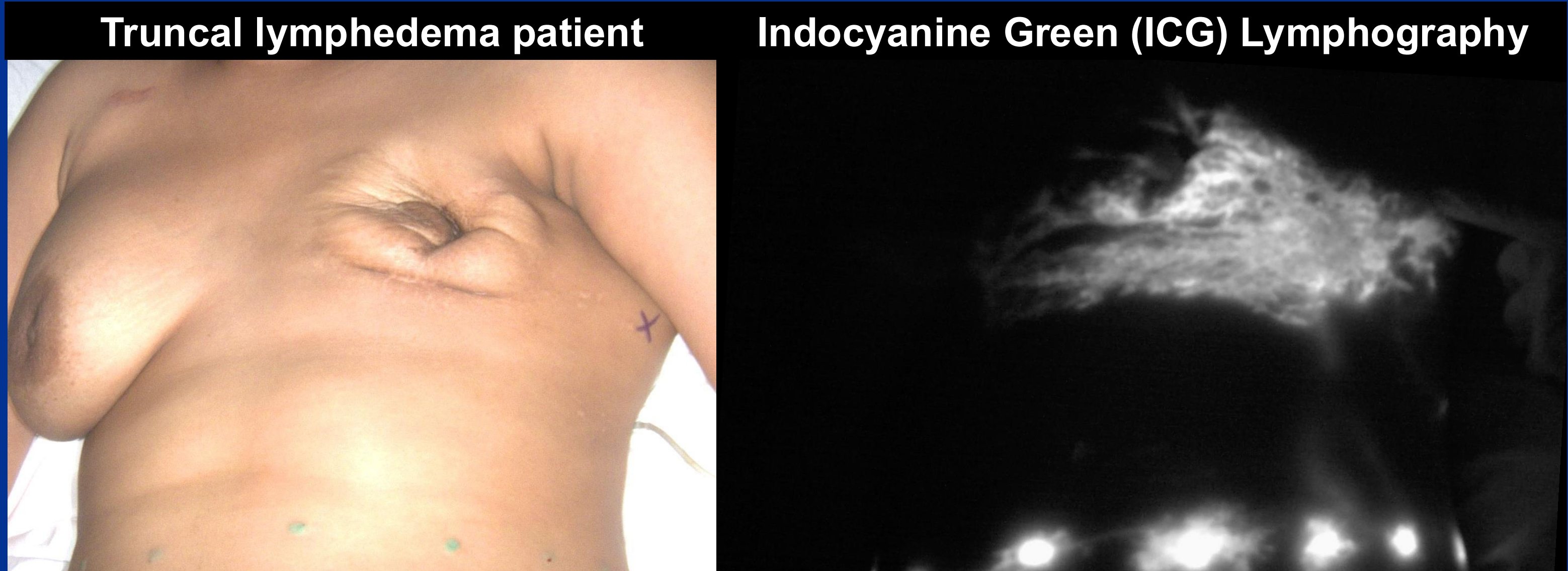
The No Flow Zone: Effects of Radiation on Lymphatic Anatomy of The Trunk

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Background

Breast Cancer Related Truncal Lymphedema

Post surgical **lymphedema** of the chest and abdomen can be assessed with ICG lymphography



Risk Factors of Lymphedema



- Lymph node dissection cuts off lymphatic drainage
- Mastectomy transects lymph pathways
- Chemotherapy is toxic to lymphatic channels
- Radiation** leads to cell death and fibrosis of lymphatic channels
- Results in direct lymphatic destruction and prevents future lymphangiogenesis

Aims

Correlate radiation treatment to severe lymphatic destruction of the chest seen on ICG
Identify changes of lymphatic drainage pathways in irradiated chests

Study Design

Retrospective Review

Breast cancer patients who received **truncal ICG lymphography over a 9-year period**

- December 2014 – January 2024
 - All patients have clinical suspicion of BCRTL
- Multivariate regression compared risk factors to No Flow Zone development

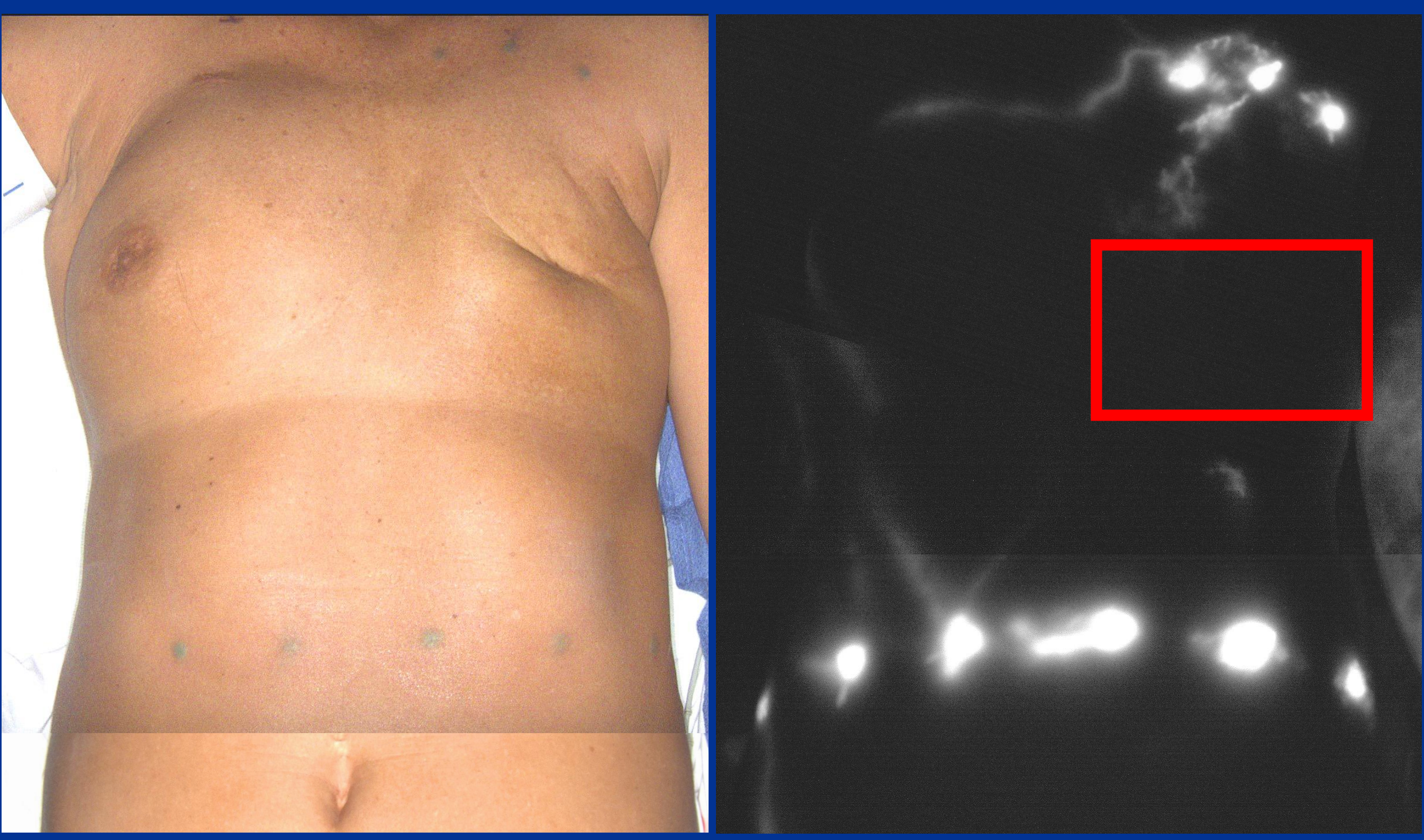
Cohort Demographics

173 hemi-trunks (95 patients)

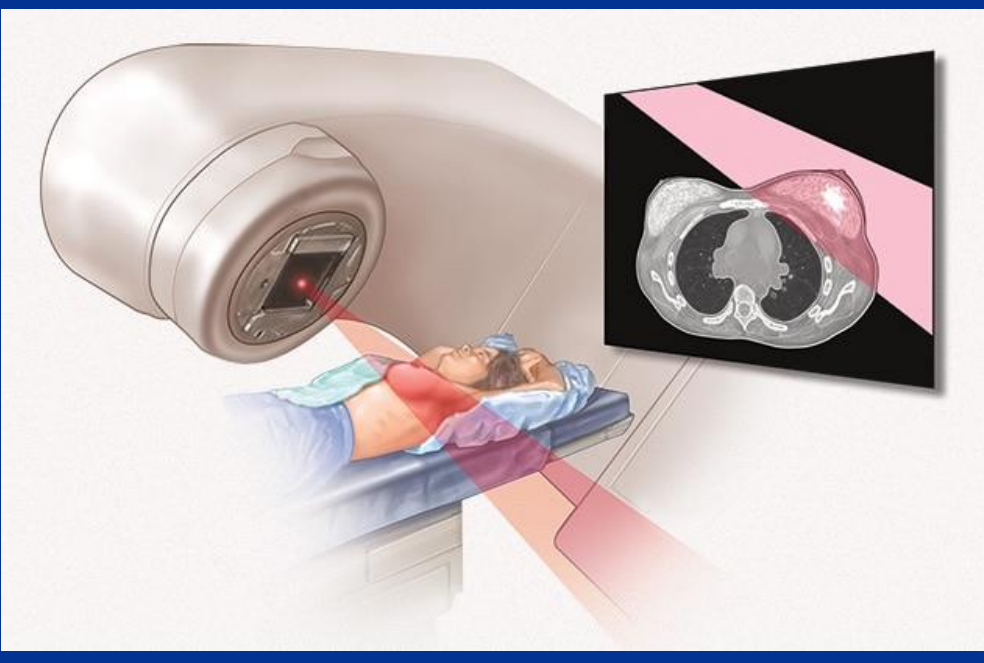
42% Irradiated	Average age: 56
79% Mastectomy	Average BMI: 30.16
65% Chemotherapy	Average time to ICG imaging: 1.3 years
27% Axillary dissection	

The No Flow Zone

No lymphatic flow represents areas of severe lymphatic disruption
This was most often seen in the inferior mastectomy skin flaps



Radiation was associated with 2.42 times increase in odds of no flow zones



Truncal Lymphatic Patterns

Radiated trunks showed significant increase in aberrant lymph flow to the contralateral axilla

Non-Irradiated		Irradiated	
Drainage Pathways		Drainage Pathways	
Ipsilateral Axilla	45%	Ipsilateral Axilla	43.8% (p= 1)
Ipsilateral Groin	60%	Ipsilateral Groin	74% (p= 0.57)
Contralateral Axilla	18%	Contralateral Axilla	28.8% (p= 0.023*)
Contralateral Groin	9%	Contralateral Groin	9.6% (p= 1)