

CLINICAL HIGHLIGHTS

Flexitouch® System Stimulates Lymphatic Function for Head and Neck Cancer-Related Lymphedema Patients

Original Article: Head and Neck Lymphedema: Treatment Response to Single and Multiple Sessions of Advanced Pneumatic Compression Therapy
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OBJECTIVE

Use near-infrared fluorescence lymphatic imaging (NIRFLI) to determine if Advanced Pneumatic Compression (Flexitouch) is effective in stimulating lymphatic function, immediately and longitudinally, in head and neck cancer-related lymphedema (HNCRL).

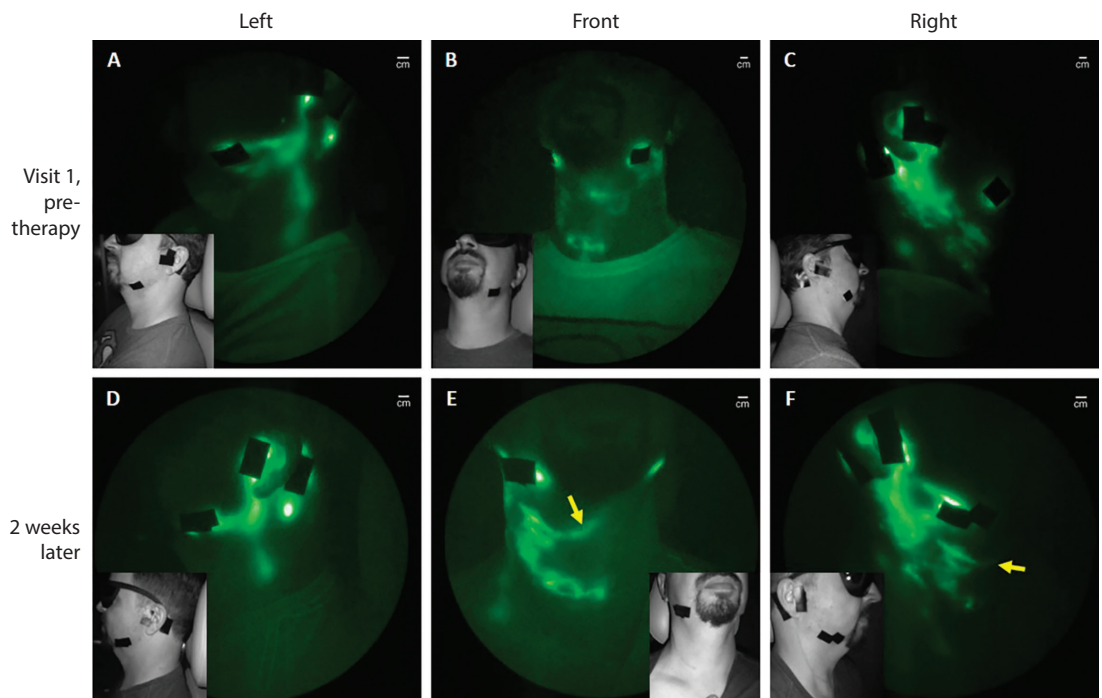
METHODS

- 10 HNCRL patients who are at least 3/mo out from cancer treatment
- Visit 1:**
 - NIRFLI and facial composite measurements at baseline
 - 32-minute treatment with Flexitouch

- NIRFLI and facial composite measurements post-treatment
- Patient reported impact on symptoms post-treatment
- Interim (2 Weeks):**
 - Patients use Flexitouch Head and Neck at home for 2 weeks
- Visit 2:**
 - NIRFLI and facial composite measurements for longitudinal baseline
 - 32-minute treatment with Flexitouch
 - NIRFLI and facial composite measurements post-treatment
 - Patient reported impact on symptoms post-treatment

Example: Case 5

Near-infrared fluorescence lymphatic imaging illustrating case 5's pretreatment lymphatics at visits 1 (A–C) and 2 (D–F). Better-formed lymphatics are observed (D) along the jawline and (E, F) pumping lymph (arrows) right to left toward healthier vessels.



BASELINE OBSERVATIONS

8/10 patients presented with “dermal backflow” or retrograde lymphatic drainage to initial lymphatics, a key indicator of lymphatic dysfunction seen in both HNCRL¹ and breast cancer-related lymphedema^{2,3} (BCRL).

IMPACT OF A SINGLE TREATMENT

- All subjects exhibited enhanced lymphatic uptake marked by recruitment of previously inactive lymphatic vessels, drainage to lymph nodes, and/or acute increases in backflow as lymph moved toward functional lymphatics—as also seen in previously BCRL studies using Flexitouch.
- 8/10 patients reported feeling somewhat or much better and 3/10 patients reported improved swallow with one treatment.

IMPACT OF 2 WEEKS OF TREATMENT

- After longitudinal treatment, new baseline NIRFLI imaging showed 6/8 patients initially exhibiting backflow experienced reductions in backflow; one of these exhibited complete amelioration and active lymphatic propulsion absent in visit 1.

- The 2 cases with reported backflow who did not exhibit significant reductions in dermal backflow both reported improvements in speech and swallow, with one regaining ability to swallow liquids without forced nasal drainage, showing reduction of internal swelling not readily imaged by NIRFLI.
- All patients reported feeling somewhat or much better during the study and 5/10 patients reported improved swallow and/or reduced tightness in throat.
- Additional patient reported outcomes included softer neck, improved voice, less edema, and feeling more relaxed.

CONCLUSION

Two weeks of Flexitouch use improved lymphatic uptake in all patients and reduced dermal backflow in 75% of HNCRL patients with dermal backflow. One patient achieved complete backflow amelioration, a condition demonstrated in previous studies to be persistent.¹ Future studies should be conducted on symptom impact and durability over longer periods of treatment in HNCRL.

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