

Beyond skin deep: using ScarWork to improve linear surgical scars for head & neck cancer survivors – a clinical outcomes study

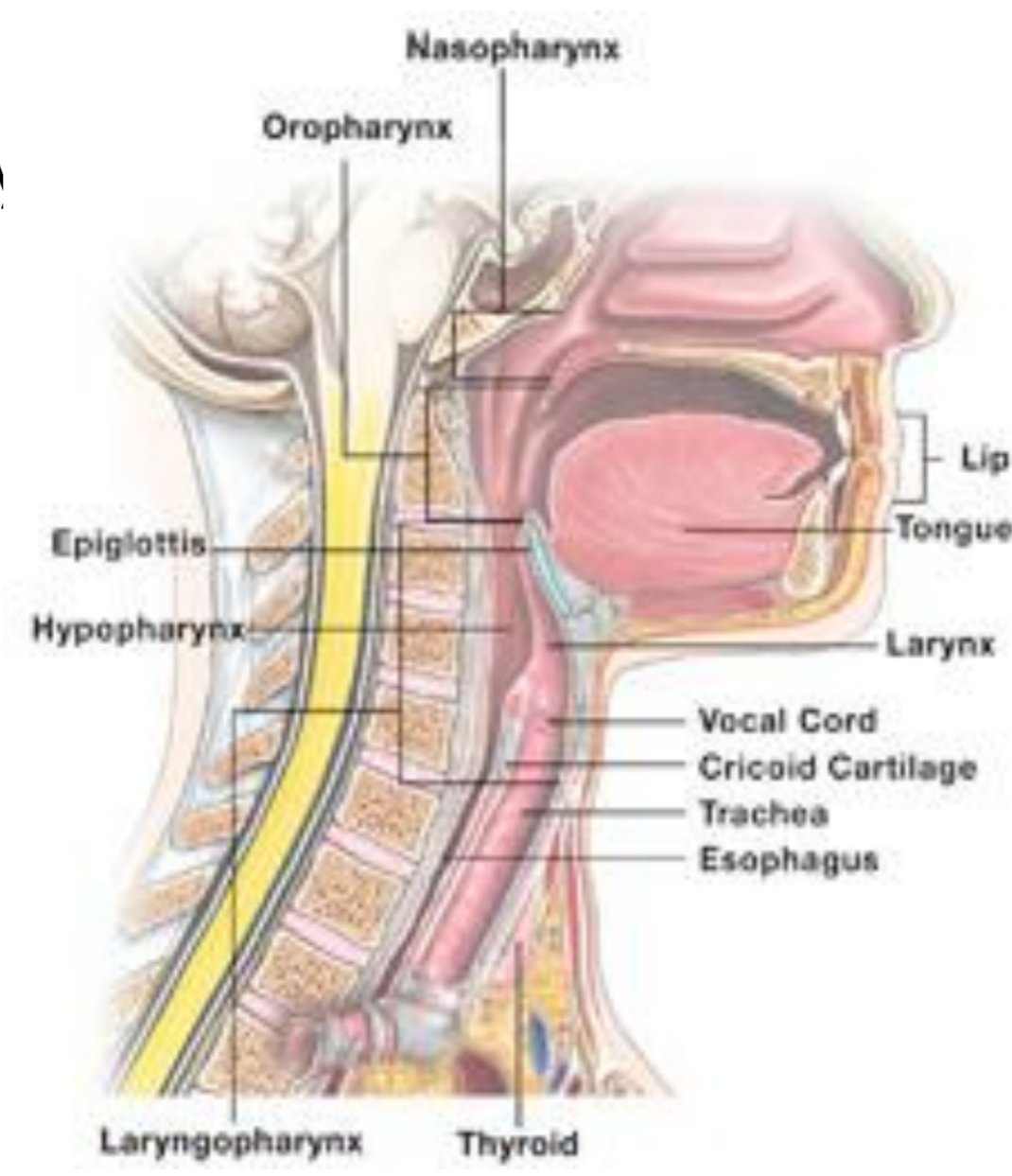
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Introduction

Head and neck cancer (H&NC) accounts for one sixth of cancer diagnoses in the UK and globally. Curative treatment rates for early tumours are 80-90% using surgery, radiotherapy, and /or systemic anti-cancer treatments with up to 59% of people surviving for 10 or more years after diagnosis.

Survivors having surgical resection may have multiple scars, including those local to the tumour site and from donor graft sites on the limbs and torso. Scars can significantly alter appearance and affect functionally critical structures. Resulting body image concerns may cause behavioural and emotional difficulties which affect quality of life.



ScarWork

We investigated a novel intervention, ScarWork, to assess its potential impact on the physiological and psychological morbidity associated with linear surgical scars that are a consequence of curative treatment of H&NC.

ScarWork, developed by Sharon Wheeler in the USA, is a painless, non-invasive light touch therapy that uses over 30 specialised techniques that aim to reconfigure soft tissues to improve scar appearance and reduce associated adhesions that contribute to reduced mobility, organ function and pain. While its mechanism is not yet understood, changes in collagen have been observed under ultrasound supporting Wheeler's claims for ScarWork's capacity to improve appearance, structure and functionality of associated tissue.

Aims

- Preparatory to designing a research study, we conducted a small clinical outcomes project to:
 - Assess the acceptability of ScarWork to H&NC patients.
 - Gain an indication of the effectiveness of ScarWork for relieving scar-related symptoms.
 - Test a range of outcome measures for assessing changes in linear scars and quality of life.

Methods

Survivors attending a H&NC support group at Mount Vernon Cancer Centre self-referred or were referred by health care professionals to attend a fortnightly ScarWork clinic running from November 2017 to June 2018. They gave written consent for treatment and for use of their anonymised data, including before and after photographs of scars, and completed outcome measures including the Patient Scar Assessment Questionnaire (PSAQ) and Measure Yourself Medical Outcome Profile (MYMOP) at baseline and end of treatment.

Results

Four male H&NC survivors attended the ScarWork clinic, with the following characteristics.

Characteristic	Mean or Median (n=4)	Range
Age at first ScarWork treatment (years)	62.75 (mean)	51-72
Scar(s) age (months since surgery)	37.25 (mean)	4-85
No of scars	2 (median)	1-6
No of ScarWork treatments	8 (median)	5-11

Data from outcome measures is being analysed. Participants' written comments about their ScarWork treatments are presented below (excepting Patient 3 who withdrew after 4 treatments due to cancer recurrence, returning some time post-surgery for a fifth ScarWork treatment).

Patient 1

Age: 51, **Scar(s) age:** 34 months, **No. of scars:** 5, 3 local, 2 graft sites; **No. of treatments:** 9
Cancer diagnosis: T2N0M0 squamous cell carcinoma right tongue and floor of mouth
Cancer treatment: Surgery only, right partial glossectomy, right neck dissection and reconstruction with left radial forearm flap. Tissue taken from torso to repair forearm. 34 lymph nodes removed from neck; tracheostomy and Doppler fitted during surgery.

Scar presentation: Three local scars and graft site on left forearm were treated with ScarWork. The latter is reported here. The forearm scar comprises a circular area proximal to wrist (approximately 3 centimetre diameter) with tail running from proximal edge of circle up the centre of the forearm to near the elbow crease (see photos below).

Patient assessment of scar pre-treatment:

"The forearm scar ... was the most sensitive ... the sensation I have is like a sharp spiking pain that travels through my inner wrist all the way through to the tip of my thumb when a certain part of the scar is touched." He reported "numbness of area around scar, pain from lower part of scar (wrist)" and restricted physical activity, specifically lifting with the left arm.

Patient assessment of scar after 3 ScarWork treatments:

"I am very comfortable with this scar both in sensation and appearance...I have little or no spiking pain now and this was after just three sessions so my scepticism proved to be unfounded to be honest. I feel the benefits in many areas from sleeping to wearing of watches and even lifting of weight with my left arm."



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Patient 2

Age: 59, **Scar(s) age:** 85 months, **No. of scars:** 1 local **No. of treatments:** 11
Cancer diagnosis: pT1N2aM0 squamous cell carcinoma of the left tonsil
Cancer treatment: Radical chemoradiotherapy, 66 Gy in 33 fractions to tonsil and left neck completed December 2010

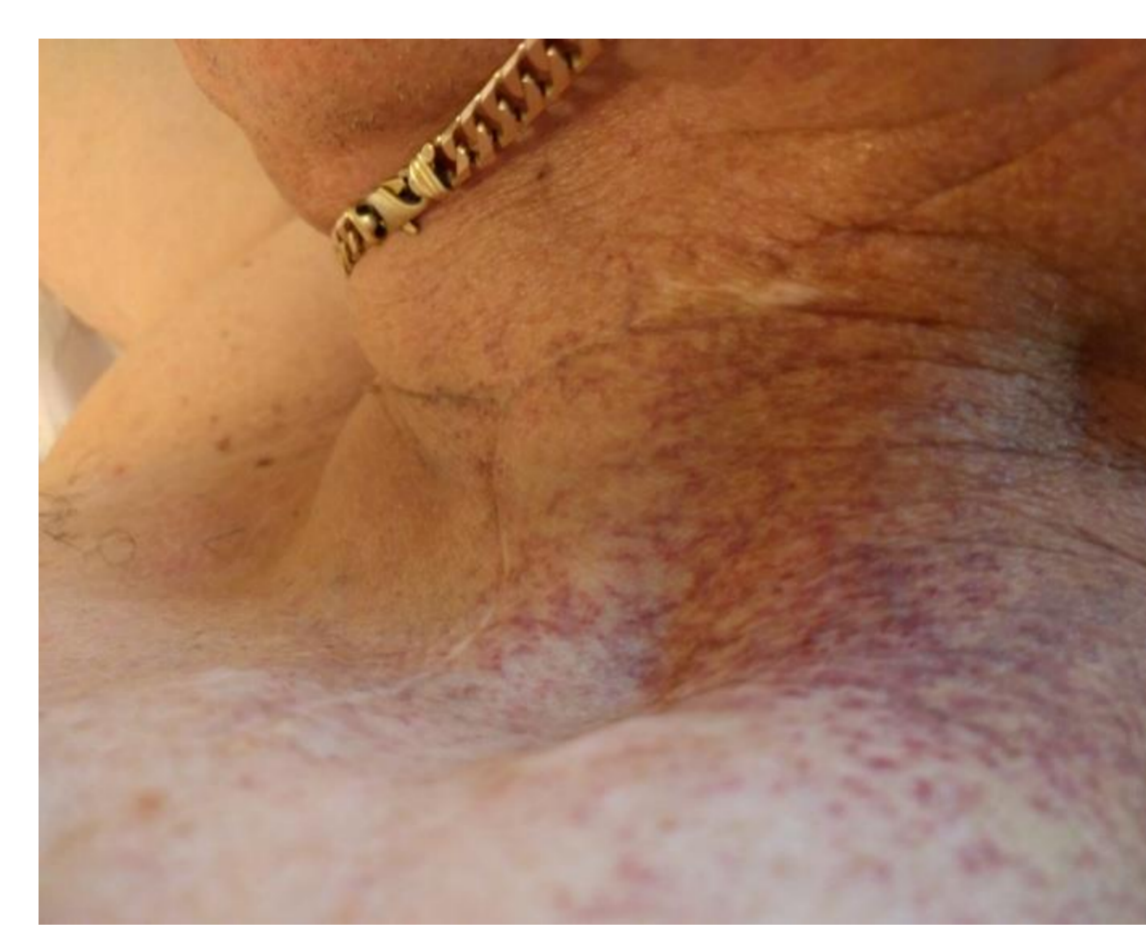
Scar presentation : Linear scar from behind top of left ear to under chin with fork transcending to left clavicle. Complex presentation due to radiotherapy burns confounded by subsequent burns from applying a wheat bag. The area surrounding scar is discoloured with mottled purple red; skin hard to the touch. Further consequences: loss of mobility in neck and arm with consequent muscle wastage affecting movement and loss of confidence due to scar appearance.

Patient assessment of scar pre-treatment:

"The scar on my neck very angry looking and the skin on my neck [feels] like leather." "Tightness" in the area and "sensation (pins and needles, numbness, itchy)".

Patient assessment of scar after 11 ScarWork treatments:

"... skin is a lot smoother and feels like my neck belongs to me again, before the treatment my neck felt unpleasant and affected my confidence when talking to people and also at times made me quite distressed. Since the therapy I have felt so much better in myself, it has improved my confidence and I feel more positive about the future and gives me motivation to self-manage the effects of cancer treatment, and after so much negativity this therapy is having a positive result. I was diagnosed in September 2010 and finished treatment December the same year. If the ScarWorks clinic was operational then it would have saved me seven years of discomfort."



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Patient 4

Age: 69, **Scar(s) age:** 4 months, **No. of scars:** 2, 1 local, 1 graft; **No. of treatments:** 8
Cancer diagnosis: T4N0M0 squamous cell carcinoma of the posterior tongue to oropharynx
Cancer treatment: Chemoradiotherapy completed April 2017. Tumour recurrence at base of tongue/mandible confirmed September 2017 requiring mandible and lip split access, base of tongue resection, mandible rim resection and ALT (anteriolateral thigh) flap.

Scar presentation: Linear scar curving from behind top of right ear, joining vertical scar zig-zagging from chin down throat to suprasternal notch. Area red with swelling; skin adjacent to curving scar purplish in colour and dry and flaky. All areas along scar tight with no tissue movement; swelling on throat restricts swallowing.

Patient assessment of scar after 8 ScarWork treatments:

"I cannot stress enough the importance of this work to me both physically and emotionally. I had chemo therapy, radio therapy and then extensive surgery to my mouth being told it would be 6 to 9 months before seeing any significant improvement in my recovery. Likewise with speech therapy I have exercises to be repeated on a daily basis to improve my speech and swallowing over an extended period of time. The massaging however gives almost instant relief, such a boost both physically and emotionally.

The mental effect to recovery [of ScarWork treatment] should not be underestimated in any way. From the impact of being told, "It is cancer" through all the treatments to have this oasis of help in my recovery has been so positive I find it hard to quantify."

Discussion

This project provided diverse scar presentations and demonstrates that ScarWork is effective on recent and long-standing scars. Patients reported little discomfort and immediate, important and sometimes surprising benefits of treatment, contributing to improvement in overall quality of life. It also enabled setting up of a process for the safe storage of photographs according to data protection policies. And it demonstrates there is an art to taking meaningful before and after photos!

Imminent analysis of the PSAQ and MYMOP questionnaires will provide an indication of clinical effectiveness as well as the sensitivity of these outcome measures.

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Conclusions

ScarWork treatment effects go beyond skin deep, affecting physical and psychosocial health in diverse ways. More research is necessary to establish the mechanism of ScarWork and also to investigate clinical effectiveness in a formal manner.

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