

Appearance Normalization to the Casual Observer Following Head and Neck Surgery

Background

- Head and neck cancer (HNC) represents approximately 5% of all cancers, but given the visible nature of the area affected, patients experience a disproportionate disability related to appearance, self-image and quality of life (QOL).
- Body image concerns in adults treated for cancer include perceived changes in appearance and displeasure with changes and psychological distress about perceived changes.
- Body image distress is associated with decreased QOL, depression, poorer social relationships, impaired identify and sexual problems.
- Plastic and reconstructive techniques allow for improved form and function in patients following HNC treatment, however, improvements in body image perspective from the external casual observer must be assessed.

Objective

- We look to quantify changes in casual observer attention for patients who received recontouring following HNC treatment, as a measure of improved body image.

Methods

- This was a prospective observational study on casual observers viewing before and after photographs of patients who received plastic and reconstructive surgery following HNC treatment.
- Participants were shown a total of 16 photographs from 4 patients in random order, a preoperative and postoperative anterior and sideview photograph of each patient.
- Photographs were of patients that received a Grecian Urn submentoplasty for neck rejuvenation.
- Following proper calibration of the Tobii Pro Nano, participants viewed each photograph for 6 seconds, without prior sensitization to the study objective.
- The primary measurement was total duration of fixations on the neck before and after submentoplasty.
- A paired t-test was used to determine significance.

Results

- A total of 82 participants were included in the final analysis with a mean age of 52 (19-88), 55 females and 27 males.
- The greatest difference in duration of visualization was seen in the sideview- 165 ms, 365 ms, 208 ms, 161 ms (p-value <0.05).
- The anterior views also show a decrease in duration of neck fixation, although not significant.
- Patient 4 had an increase in duration on the anterior view that was seen to be significant, however the duration of both preop and postop in minor and clinically insignificant.



Image 1. Areas of interest (AOI). A: Preop anterior view. B: Preop side view. C: Postop anterior view. D: Postop side view.

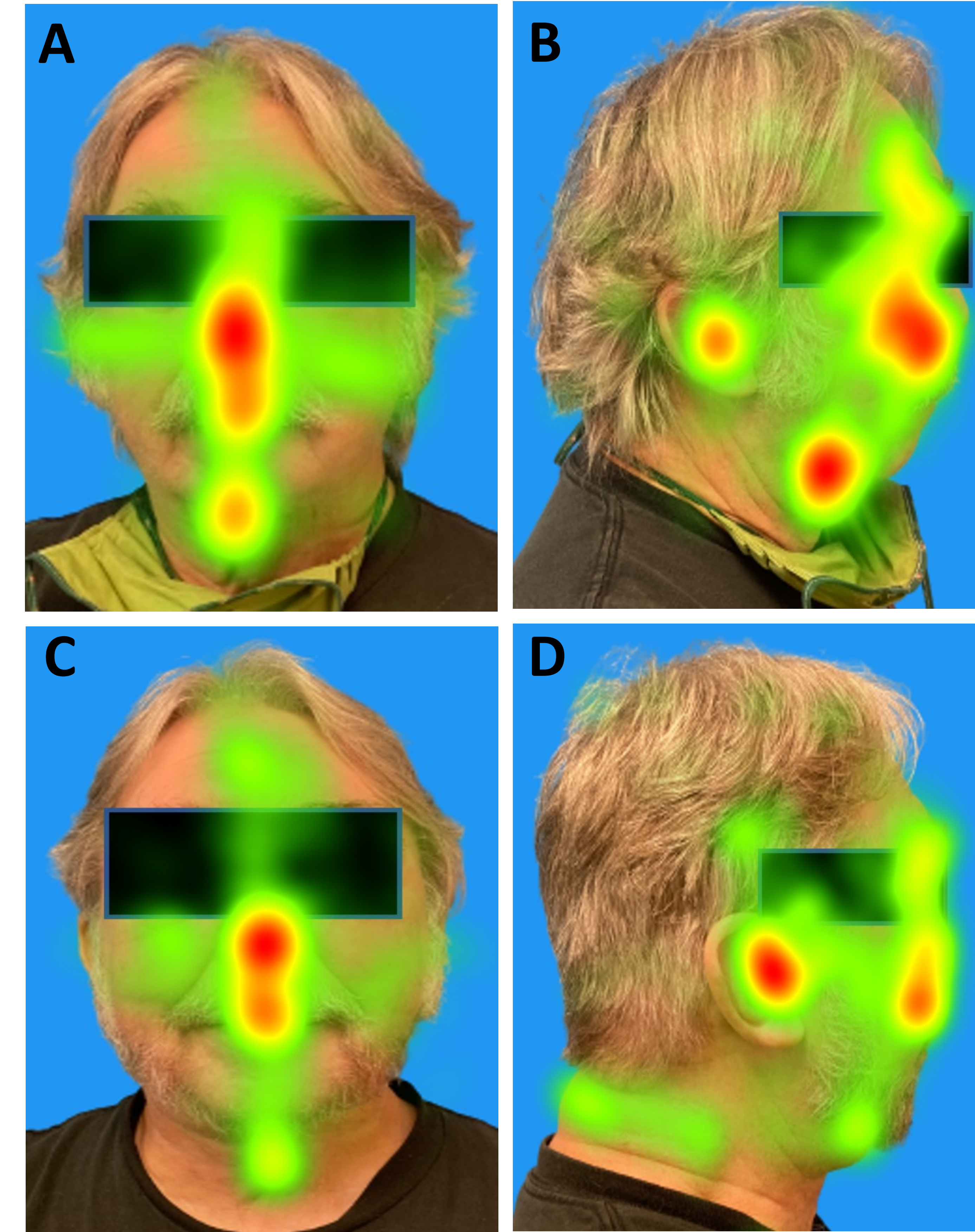


Image 2. Duration of fixation heat map. A: Preop anterior view. B: Preop side view. C: Postop anterior view. D: Postop side view.

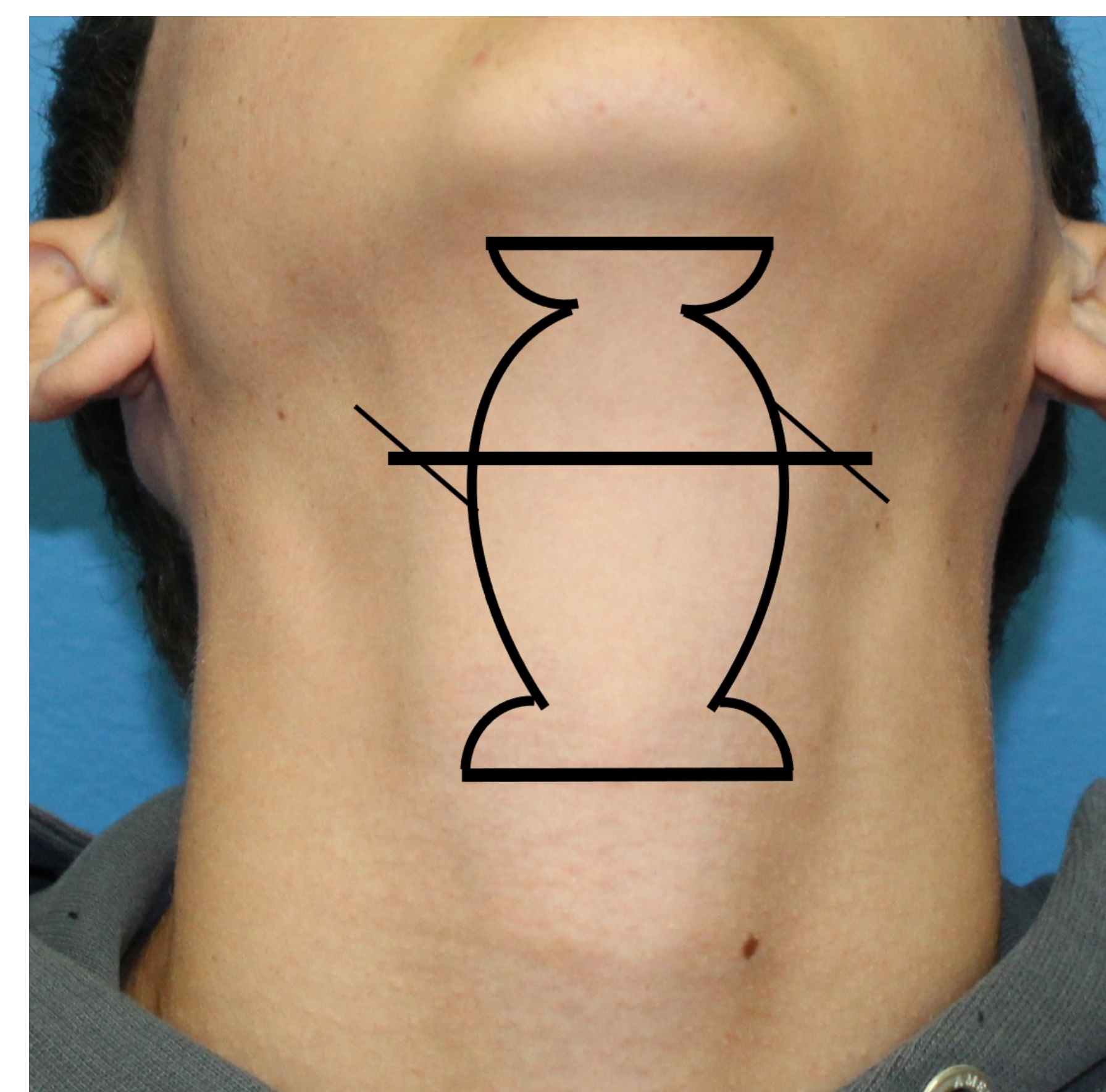


Image 3. Grecian Urn direct neck lift.

Duration of Fixation & Difference (mean)						
Patient	Preop Anterior (ms)	Postop Anterior (ms)	Difference (ms)	Preop Side (ms)	Postop Side (ms)	Difference (ms)
1	329	234	95	522	357	165
2	395	295	100	749	384	365
3	367	325	42	539	331	208
4	31	83	-52	357	196	161

Conclusion

- HNC is associated with major changes in quality of life and appearance.
- Changes in appearance have proven a major cause of emotional and social stress.
- Recontouring following HNC improves patient self-perception as well as casual observer focus, especially in the side profile.
- There are limitations to this study including imperfect standardization of photographs such as identity concealment boxes and various accessories such as piercings, previous facial scars, and glasses.
- Although these limitations exist, previous eye-tracking studies have shown that these differences in standardization do not significantly contribute to changes in results.
- Patients can be reassured that return of form and function are possible following plastic and reconstructive surgery after HNC treatment.

Contact & References

