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Utility Outcome Assessment of the Aging Neck following Massive Weight Loss

Hani H. Sinno, MD[1], Ahmed M. S. Ibrahim, MD[2,3], Ali Izadpanah, MD[1], Stephanie Thibaudeau, MD[1], George Christodoulou, MD[1], Youssef Tahiri, MD[1], Sumner A. Slavin, MD[3], and Samuel J. Lin, MD[2,3]

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Abstract

Objective. The authors set out to quantify the health state utility assessment of living with the physical appearance of the aging neck following massive weight loss. Described utility scores may help to establish the health burden of the aging neck in the growing bariatric patient population.

Study Design. Prospective cohort observational study.

Setting. Tertiary referral medical center.

Subjects and Methods. Three validated tools were used to determine utility scores for living with an aging neck: visual analog scale (VAS), time trade-off (TTO), and standard gamble (SG). A 5-point Likert scale was used to evaluate the subjects' ease of understanding. A prospective sample of volunteers from the general population and medical students was used for this assessment.

Results. In total, 118 prospective volunteers were included in the survey. All measures (VAS, TTO, SG); (0.89 $\pm$ 0.07, 0.94 $\pm$ 0.08, and 0.95 $\pm$ 0.10, respectively) varied ($P < .0001$) from the corresponding ones for monocular blindness (0.62 $\pm$ 0.18, 0.87 $\pm$ 0.15, and 0.85 $\pm$ 0.20, respectively) and binocular blindness (0.32 $\pm$ 0.18, 0.66 $\pm$ 0.25, and 0.64 $\pm$ 0.28, respectively).

Conclusion. The authors objectified the health state of living with an aging neck in the massive weight loss patient with utility scores (TTO, 0.94) comparable with those living with obstructive sleep apnea. This sample population, if faced with an aging neck following massive weight loss, would undertake a neck rejuvenation procedure with a theoretical 5% chance of mortality and would be willing to trade 2.1 years of remaining life-years to attain this procedure.

Keywords

QALY, utility assessment, outcome scores, health status, aging neck, bariatric patient

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The natural process of aging in the head and neck is a combination of changes in skin texture and decreased facial volume manifested by, among other factors, the loss of tissue elasticity, redistribution of fat, bone resorption, and the effect of gravity.[1] Aesthetic enhancement of the aging neck is one of the most challenging components of surgical facial restoration.[2] To achieve optimal results in the face and neck, surgical treatment is based on a variety of factors such as the condition of the platysma muscle, redundancy of skin, skin tone, presence of excess submental fat, projection of the anterior mandible, and position of the hyoid bone.[3] Indeed, successful neck rejuvenation in the massive weight loss patient may pose additional challenges simply because of the amount of excess skin and subcutaneous tissue. There are various approaches used either individually or combined in an attempt to achieve a desired result. These techniques range from laser resurfacing to modified deep-plane rhytidectomy with a lateral approach, composite rhytidectomy, vest-over-pants platysmaplasty, corset platysmaplasty, submental suction-assisted lipectomy, multiple suture techniques for neck contouring, and chin augmentation, as well as other techniques.[2-8]

Utility scores have been used to quantify the risk/benefit ratio of a given intervention or nonintervention for a range of conditions, including end-stage renal disease on hemodialysis and after renal transplant,[9] human immunodeficiency virus stage II,[10] diabetes mellitus type I,[11] erectile dysfunction,[12] severe breast hypertrophy,[13] and obstructive sleep apnea syndrome.[14] The use of utility scores may help to

[1]Division of Plastic and Reconstructive Surgery, Montreal General Hospital, McGill University, Montreal, Canada
[2]Division of Otolaryngology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, USA
[3]Division of Plastic Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, USA

Corresponding Author:
Samuel J. Lin, MD, Divisions of Otolaryngology and Plastic Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, 110 Francis St, Suite 5A, Boston, MA 02215, USA
Email: sjlin@bidmc.harvard.edu