

Canthopexy Evaluation: A Practical Tool for Objective Efficiency Evaluation

Janos Cambiaso-Daniel^{1,2} Sarah Victoria Wünscher¹ Dario Bertossi⁴ Alessandro Gualdi^{2,3,5}

¹Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz, Graz, Austria

²Milano Face Institute, Milan, Italy

³University Vita-Salute San Raffaele, Milan, Italy

⁴Division of Dental and Maxillofacial Surgery, Department of Surgery, Medical University of Verona, Verona, Italy

⁵Dental School, University Vita-Salute San Raffaele, Milan, Italy

Address for correspondence Alessandro Gualdi, MD, PhD, MSc, Milano Face Institute, Milan, Italy (e-mail: alegualdi@yahoo.it).

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The lateral canthus and its position play an important role in the appearance and shape of the eyes and can be highly influenced by several aspects.¹ Therefore, different surgical correction approaches have been purposed; however, none of them have been quantified in terms of efficiency.² After reading with great interest, the manuscript by Botti et al

entitled “Dynamic Canthopexy” Drill Hole Canthal Repositioning,” we successfully developed a tool for the efficiency evaluation of any canthopexy technique.³

For the evaluation, a dynamometer (A05L, WeiHeng, Guangzhou, China) has been used on 10 Caucasian fresh cadaver heads (5 females) to evaluate the force distribution

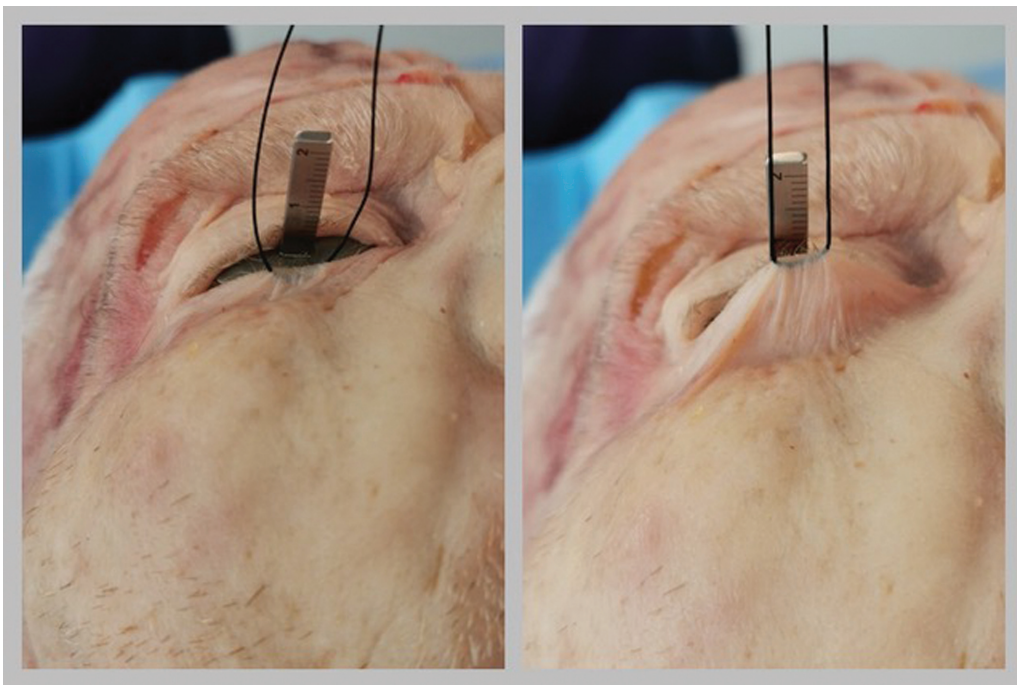


Fig. 1 Preoperative lower eyelid excision.

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at the level of the lower tarsus. The measurements were made before and after surgery was performed according to Botti's technique.³ Before surgery, 0.9% physiological solution was injected into the bulbus until reaching the physiological tension and a steel eye protector was positioned. For the quantification, an Ethilon 3.0 suture (Ethicon Inc, Sommerville, NJ, USA) was placed as a traction thread directly through the midpoint of the inferior tarsus. The dynamometer was then attached to the traction wire to obtain a precise estimation of the tension exerted on the lower tarsus to create a displacement of 10 mm (→ Fig. 1). The necessary voltage value was carefully recorded, to be then compared, at the end of the intervention, with the new value. The average tension recorded with the dynamometer before surgery was 35.5 ± 8.4 kfg, while after surgery, the mean tension passed to 118.5 ± 12.8 kfg with a therefore statistical significance ($p < 0.0001$).

Considering our results, we can confirm the efficiency of the dynamic canthopexy technique in terms of force distribution and allow the possibility for the comparison between different canthopexy techniques in the future.³ In fact, force distribution dynamometers have been previously used in the context of plastic surgery.⁴ In addition, the use of force evaluation could be further expanded to evaluate the efficiency of other surgical techniques because it enables quantitative measurements of results in comparison to the subjective evaluation made by patients themselves, which has major limitations.^{2,3,5}

After validating the procedure on cadavers, the authors have successfully tested the validity of the tool also in patients. However, in our opinion, we do not believe the

quantitative evaluation with a dynamometer can add benefits to any kind of canthopexy surgery but can definitely be used as a standard tool in the evaluation process of novel canthopexy techniques.

Note

The study was conducted as a quality assessment study and all procedures performed in the study involving human participants were in accordance with the ethical standards of the National Research Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflict of Interest

None declared.

References

- 1 Botti G, Botti C, Cella A, Gualdi A. Correction of the naso-jugal groove. *Orbit* 2007;26(03):193–202
- 2 Bhattacharjee K, Ghosh S, Ugradar S, Azhdam AM. Lower eyelid blepharoplasty: An overview. *Indian J Ophthalmol* 2020;68(10):2075–2083
- 3 Botti G, Botti C, Rossati L, et al. "Dynamic Canthopexy" drill hole canthal repositioning. *Aesthet Surg J* 2019;39(12):1284–1294
- 4 Raposio E, Cella A, Panarese P, Caregnato P, Gualdi A, Santi PL. Quantitative benefits provided by acute tissue expansion: a biomechanical study in human cadavers. *Br J Plast Surg* 2000;53(03):220–224
- 5 Chae SW, Yun BM. Cosmetic lateral canthoplasty: lateral canthoplasty to lengthen the lateral canthal angle and correct the outer tail of the eye. *Arch Plast Surg* 2016;43(04):321–327