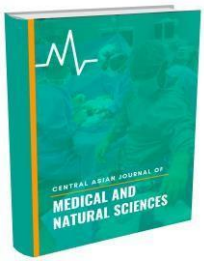

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Article

Effectiveness Of Myocutaneous Flap Suspension In Lower Eyelid Blepharoplasty Without Canthopexy

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Abstract: Blepharoplsty is the one of the most common cosmetic procedure performed by plastic surgeons. Lower blepharoplasty remain challenging procedure as it associated with high propensity of postoperative complications especially lower eyelid malposition. Lower eyelid malposition lead to possible lateral rounding, scleral show and ectropion. There is no strict and obvious indications for lower eyelid anchoring procedure, but it might be used for patient with greatest risk include those with positive snap test. Other authors do routine lid tightening procedure in all cases,even transconjuctival approach.1,2,3,4 Muscle suspension technique in lower eyelid blepharoplasty described by many authors which all aimed to improve lower eyelid tone and position 5.In this study we explore the clinical effect of application of modified myocutaneous flap anchoring method in lower blepharoplasty.

Keywords: Myocutaneous, Flap Suspension, Eyelid Blepharoplasty

1. Introduction

In this study 60 patients (55 female vs 5 male) with age ranging between 35-65 years were subjected to the lower eyelid blepharoplasty with utilizing myocutaneous flap suspension with or without previous upper eyelid blepharoplasty.We included all patients seeking for periorbital rejuvenization procedure in which complaining of excess skin and periorbital fat herniation.We excluded those patients who had previous lower eyelid blepharoplasty and those patients with unrealistic expectation.

All our patients underwent full ophthalmological examination and assessment degree of skin excess, fat herniation and lower eyelid laxity. Laxity of the lower eyelid was assessed by snap test and distraction test[1].

All our patients had medical and drugs history focusing on conditions that may lead to postoperative complications[2] like hypertension and bleeding tendency. Routine preoperative investigations were sent for all our patients. Informed consent was obtained from all our patients.

2. Materials and Methods

All operations were done under local anesthesia in which **marking** done in lying down position with head up about 45 degree begin medially just lateral to the lacrimal punctum 2-4 mm below eye lashes till lateral canthus than tilt downward laterally 5 mm with lower crow feet wrinkle[3].

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Working out of how much safely excess skin to be removed done by holding skin with non tooth forceps[4] while the patient looking up on the top of head or opening mouth in which lower incision drew laterally with reducing amount of vertical skin removing underneath the eye. Recheking done[5] after marking by pinching the excess skin while the patient looking up on the top of head. Local anesthesia done by infiltration 3-5 ml of 2% xylocaine with 1:200000 adrenaline subcutaneously[6].

Incision of the previously marked skin begin with 15 blade little deeper laterally[7] through thick skin then dissection done laterally to make pocket under the skin and muscle to find the plain between muscle and orbital septum in which the spring scissor slid and stretch to separate[8] skin and muscle from underlying orbital septum. Excision of excess skin and muscle done by angle the scissor for subcillary incision to leave strip of pretarsal muscle on lower eyelid and perpendicular for lower incision after that[9] hameostsis is necessary further dissection to separate myocutaneous flap until orbital rim,excess periorbital fat removed, haemoatasis secured[7].

The lid suspension done by placing 5/0 vicryl suture at lateral orbital rim periosteum(at lateral canthus) and checking it solid buy pulling suture in which entire head move, than taking muscle in horizontal [10] mattress fashion in straight line toward the corner of mouth and the suture locked in place therefore the myocutaneous flap will pull superiolaterally[11].

Second inverted 5/0 vicryl stich take in muscle for further supporting anchor and apposition of skin, subcilary incision closed by 6/0 proline suture subcuticularly[12], local antibiotics ointment applied to the incision with steri strip below the incision to further support and decrease postoperative swelling[13]. Patient instructed to keep head elevated with using ice-bag[10], artificial tear and antibiotics ointment[14]. The sutures removed after 1 week postoperatively.

3. Results

The mean age of our patients was 42 years(ranging from 35 to 65 years).Concomitant other facial aesthetic procedure was done in 6 patients(3 facelift,2 brow lift and 1 lip lift)[15].The patients were follow up to 6 months after operation. All our patients had transcutaneous approach lower eyelid blepharoplasty with skin-muscle flap suspension[16]. We reported no early postoperative complications like dry eye, vision loss, only one patient with mild haematoma evacuated at 7 days postoperatively by aspiration[17]. No complications related to the stich like extrusion, granuloma or infection was seen only mild pain, swelling and ecchymosis at the lateral canthal region[18]. The

overall satisfaction rate was excellent in 90% of our patients and good in 10% of our patients according to the visual analogue scale.

4. Discussion

Lower eyelid ectropion after lower eyelid blepharoplasty is challenge to be treat, it lead to both functional problems(dry eye, eye irritation, corneal ulcer, and even corneal scaring) and aesthetic problems 6.Various procedure have been being described to avoid the risk of eyelid malposition after lower eyelid blepharoplasty including canthopexy, canthoplasty, and orbicularis oculi suspension techniques[19].

One of the most problem that associated with canthopexy is that lateral canthal ligament is fragile and mostly being attenuated throughout aging process ,so that depending on the lateral canthus in achieving suspension is unreliable. Many authors believe that even in skilled hand[20], canthopexy can affected natural eyelid shape and asymmetry is quite common, on the other hand lateral[21] strip canthoplasty frequently lead to shortening of horizontal palpebral fissure which aesthetically unacceptable. 7,8,9

The origin of flap suspension in lower eyelid blepharoplasty can dated back to webster et al 10.The technique described by Webster et al is relay of lateral portion of orbicularis oculi muscle in vertical direction and secured it to periosteum of the lateral orbital rim which prevent scleral show and ectropion that could occurred after lower blepharoplasty especially in those patients with preoperative lower eyelid laxity[22].

Muscle suspension procedure which is utilized in our study showed to be reliable method to tight loose skin, muscle and preventing scleral show and malposition. Our patients were pleased with immediate result and only one patient had mild haematoma .Furthermore[24],muscle suspension provided its longevity ,were during 6 months of follow up period we demonsterated none of our patient had developed lower eyelid[27] malposition .Also through tightening of the skin and muscle ,this procedure provided our patients more attractive and youthful appearance of the lower eyelid[28]. For those authors who used suspension since long time, they have showed that muscle suspension help to prevent midface descent that occur with aging 2.Muscle suspension also reducing amount of lower eyelid fullness and smoothing wrinkles[23].

Muscle suspension can be also utilized with lateral canthoplasty to reposition[26] lateral canthal tendon and further tighten the lower eyelid 5[29].Orbicularis oculi suspension procedure allow us for safe resection of large amount of redundant skin without risk of vertical lower eyelid malposition 1[25].

Innocentni et al.evaluated the effectiveness of orbicularis oculi suspension in lower eyelid blepharoplasty through compare two group of patients in group A (20 patients) they had muscle suspension and in group B (17) patients had no muscle suspension. Their result showed that group A had cranial movement of lower eyelid in compare to group B[30].

5. Conclusion

Our study showed that anchoring of the orbicularis oculi muscle to the lateral orbital rim will provide efficient stabilizer to the lower eyelid that prevent eyelid malposition that may occur after lower eyelid blepharoplasty .Also muscle suspension tight loose skin and muscle of the lower eyelid provided patient with attractive and youthful appearance.

REFERENCES

[1] A. Innocenti, E. Dreassi, V. Carla, D. Melita, and ..., "… of residual neuro-muscular integrity in the orbicularis oculi muscle after lower eyelid transcutaneous blepharoplasty according to Reidy Adamson-s flap," Aesthetic Plastic …, 2020, doi: 10.1007/s00266-020-01783-2.

[2] T. Kaufman, B. Kaplan, L. Perry, Y. Shandalov, and ..., "Innervation of an engineered muscle graft for reconstruction of muscle defects," American Journal of …, 2019, [Online]. Available: https://www.sciencedirect.com/science/article/pii/S1600613522088979

[3] M. Morsi, M. Fata, M. Warda, A. S. Eldin, and ..., "Evaluation of the role of gracilis free flap in reconstruction of orofacial defects," Egyptian Journal of …, 2021, [Online]. Available: https://journals.ekb.eg/article_206925_97e5cdf1e107beb6c8a52f55e018ec29.pdf

[4] X. N. Wang et al., "Subcutaneous pedicled propeller flap for reconstructing the large eyelid defect due to excision of malignancies or trauma," Sci Rep, 2022, [Online]. Available: https://www.nature.com/articles/s41598-022-09100-4

[5] Y. Berkane, A. G. Lellouch, G. Goudot, A. Shamlou, and ..., "Towards optimizing sub-normothermic machine perfusion in fasciocutaneous flaps: A large animal study," Bioengineering, 2023, [Online]. Available: https://www.mdpi.com/2306-5354/10/12/1415

[6] J. H. Kim, J. K. Song, S. O. Baek, J. Y. Lee, G. Yoo, and ..., "… factors associated with the volume discrepancy in patients undergoing breast reconstruction with the extended latissimus dorsi musculocutaneous flap …," Aesthetic Plastic …, 2019, doi: 10.1007/s00266-019-01417-2.

[7] J. A. Cha and S. H. Yoon, "Axillary Reconstruction Using a Pedicled Thoracodorsal Artery Perforator Flap Including Latissimus Dorsi Muscle Strip," Journal of Wound Management and Research, 2020, [Online]. Available: https://www.jwmr.org/journal/view.php?number=313

[8] P. Li et al., "… and esthetic reconstruction of composite lower lip defects with a motor-innervated chimeric facial artery buccinator myomucosal-submental island flap," Journal of Stomatology …, 2024, [Online]. Available: https://www.sciencedirect.com/science/article/pii/S2468785524000971

[9] M. Kuwahara, S. Yurugi, K. Mashiba, J. Ando, and ..., "Costal cartilage graft to prevent drooping after free flap reconstruction of the lower lip," … Surgery–Global Open, 2022, [Online]. Available: https://journals.lww.com/prsgo/fulltext/2022/02000/costal_cartilage_graft_to_prevent_drooping_after.37.aspx

[10] L. Doan, A. P. Sam, and W. Y. Li, "Optimizing the Pedicled Latissimus Dorsi Myocutaneous Flap in Breast Reconstruction: Lessons Learned from 110 Consecutive Flaps," Plastic and Reconstructive Surgery …, 2024, [Online]. Available: https://journals.lww.com/prsgo/fulltext/2024/05000/optimizing_the_pedicled_latissimus_dorsi.14.aspx

[11] H. Saluja, S. V Shah, A. Dadhich, and ..., "… amongst two different treatment modalities for reconstruction of carcinoma of tongue patients: The infrahyoid myocutaneous flap versus radial forearm flap," National Journal of …, 2023, [Online]. Available: https://journals.lww.com/njms/fulltext/2023/14020/Evaluation_of_treatment_outcome_amongst_two.10.aspx

[12] Y. Ding et al., "A systematic review of the treatment of lower eyelid retraction and our attempt of a dermal-orbicularis oculi suspension flap," Chinese Journal of …, 2022, [Online]. Available: https://www.sciencedirect.com/science/article/pii/S2096691121001199

[13] W. Chen, L. Zhong, Y. Ruan, Y. Zhang, and K. Bian, "Composite Titanium Mesh and Sternohyoid Myocutaneous Flap for Laryngotracheal Reconstruction in Two Patients with Relapsing Polychondritis," Clin Surg. 2019; 4.

[14] C. Y. Wu, C. S. Lai, Y. P. Wang, I. C. Chen, C. T. Lu, and ..., "In situ pedicle lengthening and perforator shifting technique for overcoming the perforator variation of the anterolateral thigh free flap during head and neck …," …, 2021, doi: 10.1002/micr.30807.

[15] D. Altınel, M. Serin, H. Erdem, B. Biltekin, and ..., "Comparison of incisional delay patterns on a rat random flap model," Journal of plastic …, 2019, doi: 10.1080/2000656X.2019.1588740.

[16] T. L. Chow, S. C. Fung, C. K. P. Tsui, and J. J. M. Lim, "Infrahyoid flap—a good substitute for free flaps in oral reconstruction during the COVID-19 pandemic," Surg Pract, 2023, doi: 10.1111/1744-1633.12660.

[17] T. Morita, T. Sasaki, Y. Koizumi, H. Fukushima, and ..., "Favourable swallowing outcomes after subtotal glossectomy with laryngeal suspension," International Journal of …, 2024, [Online]. Available: https://www.sciencedirect.com/science/article/pii/S0901502723001637

[18] K. Bian, C. Qiu, G. Lu, Q. Zhao, C. Wang, and F. Zhang, "Combined application of gluteus maximus muscle flaps and random pattern skin flaps in repairing sacrococcygeal sinus tracts: a prospective study and technical note," Updates Surg, 2024, doi: 10.1007/s13304-023-01707-0.

[19] N. Evin and M. N. Selimoglu, "Reconstruction of Multiple Lip and Facial Defects With Bipaddle and Sensate Radial Forearm Free Flap," Ann Plast Surg, 2024, [Online]. Available: https://journals.lww.com/annalsplasticsurgery/fulltext/2024/05000/reconstruction_of_multiple_lip_and_facial_defects.11.aspx?context=latestarticles

[20] J.William Little,Morris E. Hartstein.Simplified muscle-suspension lower blepharoplasty by orbicularis hitch.Aesthetic surgery journal 2016;36(6):641-647.

[21] Carlo P.Honardo,Noman J.Pastorek.Long term results of lower –lid suspension blepharoplasty.Arch facial plast surg.2004;6:150-154.

[22] Ryan M. Cllar,Sofia Lyford-Pike,Patrick Byrne.Algorithmic approach to lower lid blepharoplasty.Facial plast surg 2013;29:32-39.

[23] Rohrich RJ,Ghavami A,Mojallal A.The five-step lower blepharoplasty :blending the eyelid-cheek junction.Plast Rconstr Surg 2011;128:775-783.

[24] Ira D papel.Muscle suspension blepharoplasty.Facial plastic surgery 1994;10(2):147-150.

[25] Yi Ding,Xing Huang,Lin Lu,Rul Jin,Rui Jin et al.A systemic review of the treatment of lower eyelid retraction and our attempt of a dermal-orbicularis oculi suspension flap.Chinese Journal of Plastic and Reconstructive Surgery.2024;4:38-43.

[26] Georgescu D.Surgical preferences of lateral canthoplasty and canthopexy.Curv opin ophthalmol 2014;25:449-459.

[27] Mommaerts MY,De Rin G.Prevention of lid retraction after lower lid blepharoplasty:An overview.J CranioMaxilloFacial surgery 2000;28:189-200.

[28] Bernardini Francesco P,Martin H.Devoto,Brent Skippen.(the eyelid lift) Orbicularis suspension technique for lower blepharoplasty surgery.Facial plastic surgery and Aesthetic Medicine,2020;22(3):1-2.

[29]] Webster RC,Smith Rc,Davidson TM,et al.A flap suspension technique in blepharoplasty on lower lids.J Dermatol Surg Oncol 1978;4:159-165.

[30] Mladick RA.The muscle-suspension lower blepharoplasty.Plastic and Reconstructive Surgery 1979;64(2):171-173.

[31] Innocenti A,Mori F,Melita D,Dreassi E,Innocenti M.Effects of orbicularis oculi flap anchorage to periosteum of the upper orbital rim on lower eyelid position after transcutaneous blepharoplasty.Statistical analysis of clinical outcomes.J plast Reconstr Aesth Surg 2017;70(3):385-391.