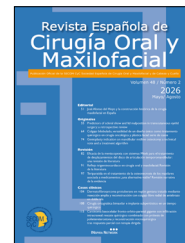




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Original

Predictors of scleral show and lid malposition in transcutaneous eyelid surgery: a retrospective review

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A B S T R A C T

Background: The transcutaneous method for lower eyelid blepharoplasty has traditionally elicited apprehensions regarding the potential for scleral exposure and eyelid misalignment. A meticulous technique, incorporating canthal reinforcement, may mitigate these associated risks.

Objectives: To assess eyelid position, complication rates, and patient satisfaction after standardized transcutaneous lower eyelid blepharoplasty.

Methods: A retrospective analysis conducted between May 22 and May 2024 involved a cohort of 95 patients who underwent transcutaneous lower blepharoplasty, a procedure executed by the principal investigator. A total of seventy-eight patients ($n = 78$) satisfied the predefined inclusion criteria and completed the requisite 12-month follow-up period. Each surgical intervention included lateral orbicularis suspension and judicious fat management.

Results: Seventy-eight patients completed 12-month follow-up after transcutaneous lower blepharoplasty. In 70 patients, Lower eyelid position remained stable postoperatively, with no significant change in mean MRD2 values ($p > 0.05$).

Pixel-based analysis confirmed true scleral show in only 12.8 % (10 cases), 4 of which were mild (< 3 mm) and without functional or aesthetic sequelae. 3 patients with moderate and 1 case with pre-existing frank eversion. Negative canthal tilt was strongly associated with this preoperative scleral show ($p < 0.001$). Qualitative eyelid position improved in 8 cases postoperatively, and 2 with mild scleral show persisted with this after surgery. A new classification of lower eyelid malposition is proposed as a modification of the previous Garcia-McCollough scale.

Conclusions: The standardized approach to transcutaneous blepharoplasty, incorporating orbicularis suspension, effectively maintains the anatomical position of the eyelids and may improve mild preoperative malposition when appropriate structural support is applied.

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Predictores de exposición escleral y malposición palpebral en cirugía transcutánea de párpado inferior: un estudio retrospectivo

R E S U M E N

Palabras clave:

Blefaroplastia transcutánea, cirugía de párpado inferior, malposición palpebral, suspensión del músculo orbicular, satisfacción del paciente.

Introducción: El abordaje transcutáneo para la blefaroplastia de párpado inferior ha estado históricamente asociado a preocupaciones relacionadas con la exposición escleral y la malposición palpebral. La aplicación de una técnica quirúrgica meticulosa, que incluya refuerzo cantal, podría mitigar estos riesgos.

Objetivo: Evaluar la posición del párpado inferior, la tasa de complicaciones y la satisfacción del paciente tras blefaroplastia transcutánea estandarizada.

Métodos: Se realizó un análisis retrospectivo entre mayo de 2022 y mayo de 2024 en 95 pacientes sometidos a blefaroplastia inferior transcutánea por el autor principal. Un total de 78 pacientes cumplieron los criterios de inclusión y completaron un seguimiento mínimo de 12 meses. En todos los casos se realizó suspensión lateral del músculo orbicular y manejo conservador de los compartimentos grasos. Se evaluó la posición palpebral mediante análisis clínico y mediciones objetivas (MRD2), así como análisis digital basado en píxeles.

Resultados: Setenta y ocho pacientes completaron el seguimiento de 12 meses. En 70 casos, la posición del párpado inferior se mantuvo estable, sin cambios significativos en los valores de MRD2 ($p > 0,05$). El análisis basado en píxeles confirmó exposición escleral en el 12,8 % ($n = 10$), de los cuales 4 casos fueron leves (< 3 mm) sin repercusión funcional ni estética, 3 moderados y 1 caso con evasión franca preexistente. Se identificó una asociación significativa entre inclinación cantal negativa y exposición escleral preoperatoria ($p < 0,001$). Se observó mejoría cualitativa en la posición palpebral en 8 pacientes, mientras que 2 casos presentaron persistencia de exposición escleral leve tras la cirugía. Se propone una nueva clasificación de la malposición del párpado inferior como modificación de la escala de García-McCollough.

Conclusiones: La blefaroplastia transcutánea estandarizada, combinada con suspensión del músculo orbicular, permite mantener la posición anatómica del párpado inferior y puede mejorar malposiciones leves preexistentes cuando se aplica un adecuado soporte estructural.

INTRODUCTION

The surgical management of the lower eyelid has undergone significant evolution, incorporating refinements that are geared toward enhancing aesthetic outcomes while simultaneously minimizing complications. Two prominently recognized methodologies in this domain are transconjunctival and transcutaneous lower blepharoplasty. The transconjunctival technique is comprehensively documented in the literature, offering advantages such as minimal scarring that is difficult to detect, reduced eyelid retraction, negligible alteration of the ocular aperture, and a diminished risk of ectropion. The approach of repositioning, as opposed to excising, fat pads further contributes to achieving more natural aesthetic results and mitigates the risk of malposition¹. In contrast, the transcutaneous method, which is less frequently discussed in scholarly works, proficiently addresses the issues of excess skin and the orbicularis oculi muscle, exhibiting a low incidence of ectropion and inconspicuous scarring; however, it is associated with complications including malposition (15 %), orbicularis denervation atrophy (1 %), and ectropion (1 %)¹. Notwithstanding the level of surgical expertise, lower lid malposition continues to represent the most prevalent complication encountered²⁻⁷. Literature suggests that the rates

of malposition are notably higher following transcutaneous surgical interventions⁷⁻¹⁰. This manuscript delineates the standardized subciliary blepharoplasty technique employed by the senior author, which has been meticulously designed to facilitate safe rejuvenation, ensure stable support of the lower lid, and achieve a natural contour while minimizing the risk of scleral show or ectropion.

PATIENTS AND METHODS

A retrospective observational study was conducted including patients who underwent transcutaneous lower blepharoplasty performed by the senior author between May 2022 and May 2024. Clinical records and standardized preoperative and postoperative photographs were reviewed. Patients with a minimum follow-up of 12 months, complete photographic documentation, and full perioperative data were included in the analysis. Patients with incomplete records, prior lower eyelid surgery, craniofacial deformities, or follow-up shorter than 12 months were excluded.

Demographic variables collected included age, sex, and Fitzpatrick skin phototype. Preoperative anatomical evaluation included canthal tilt, orbital vector, tear trough deformity,

and the presence of prominent eyes. Lower eyelid position was assessed by direct clinical examination and by standardized photographic analysis (Table I).

Quantitative evaluation of lower eyelid position was performed using Marginal Reflex Distance 2 (MRD2) measured bilaterally in preoperative and postoperative photographs. In addition, pixel-based image analysis was used to determine the presence and degree of scleral show, allowing objective comparison of lower eyelid position over time.

Qualitative assessment of eyelid malposition was performed using a Modified Garcia-McCollough Scale for Lower Eyelid Appearance, classifying eyelid position into progressive grades of malposition from normal eyelid position to frank outward eversion. Changes between preoperative and postoperative grading were recorded to evaluate eyelid stability and correction of pre-existing malposition.

Surgical variables analyzed included canthal support use, skin resection amount, need for revision surgery, and postoperative complications. Patient-reported satisfaction was also recorded.

Descriptive statistics were calculated for all variables. Continuous variables were expressed as mean $\pm$ standard deviation, and categorical variables as frequencies and percentages. Preoperative and postoperative MRD2 values were compared to assess lower eyelid stability. Associations between anatomical risk factors and the presence of scleral show were evaluated using the chi-square test, with $p < 0.05$ considered statistically significant.

Measurement

Standardized preoperative photographs were analyzed using PicPick software to obtain objective measurements of scleral show, canthal tilt, tear trough deformity, skin redundancy, orbicularis muscle redundancy, and orbital fat prominence (Figure 1).

Canthal tilt was classified according to the relative position of the lateral canthus to the medial canthus: positive when the lateral canthus was located above the medial canthus, neutral when both were at the same horizontal level, and negative when the lateral canthus was positioned below the medial canthus³.

Scleral show was defined as the visible exposure of sclera between the inferior limbus and the lower eyelid margin, indicating inferior displacement of the lower eyelid⁴.

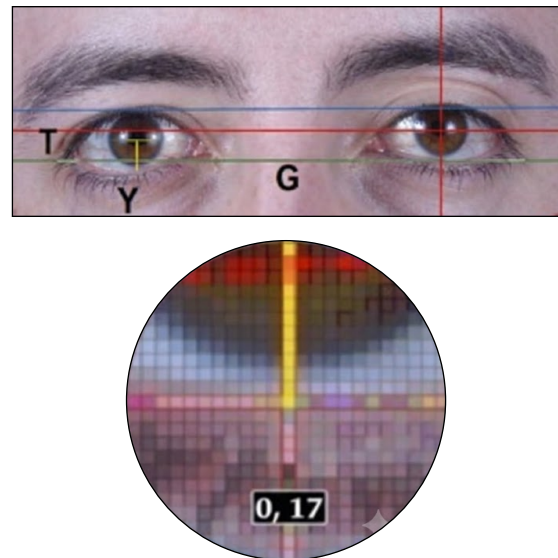
Excess skin and orbicularis muscle redundancy were identified by the presence of surplus tissue in the anterior lamella of the lower eyelid on photographic examination^{4,5}.

Orbital fat prominence was determined through evaluation of anterior and lateral preoperative photographs in conjunction with the corresponding clinical examination notes^{4,5}.

Outcomes

Clinical outcomes were assessed through a comprehensive review of medical records and standardized preoperative and postoperative photographic analysis. The primary outcomes included lower eyelid position stability, evaluated by Marginal Reflex Distance 2 (MRD2) measurements, the presence and degree of scleral show, and qualitative lower eyelid position grading using the Modified Garcia-McCollough Scale.

Secondary outcomes included the identification of postoperative complications, such as chemosis, lower lid malposition, scleral show progression, ectropion, and the need for revision surgery. Anatomical risk factors associated with lower eyelid malposition, including canthal tilt and orbital vector, were also analyzed.



Postoperative MRD2 (margin reflex distance 2) measurements were obtained using PicPick software to determine pixel distances on standardized clinical photographs. These measurements were subsequently converted to millimeters using a calibrated reference scale to ensure accurate anatomical assessment.

The asterisk (*) denotes the red reference line used for photograph standardization; T indicates the canthal tilt angle; G denotes the green reference line; Y denotes the yellow reference line. The blue line marks the upper eyelid margin, and the white line marks the lower eyelid margin. Measurements were performed using PicPick software.

Figure 1. Preoperative clinical photographs of a patient who underwent lower eyelid blepharoplasty via a subciliary approach, including orbital fat pad excision and suspension of the orbicularis oculi muscle to the lateral orbital rim. Preoperative lower eyelid malposition is evident bilaterally, as demonstrated by altered MRD2 measurements and lateral scleral show.

Table I. Demographic and Clinical Characteristics (n = 78).

Characteristic	Value
Age (years)	54.26 $\pm$ 11.09
Female	53 (67.95 %)
Male	25 (32.05 %)
2022	21 (26.9 %)
2023	38 (48.7 %)
2024	19 (24.4 %)
Orbital negative vector	Infrequent

To ensure consistency and adequate postoperative assessment, only patients with a minimum follow-up period of 12 months were included in the final analysis.

Surgical technique

All procedures were performed under general anesthesia, with local injection of lidocaine containing epinephrine for vasoconstriction. A subciliary incision was made 2 to 3 mm below the lash line, starting medially 3 to 4 mm lateral to the punctum, and extended laterally 9 to 10 mm beyond the lateral canthus within the existing crow's foot. This lateral extension not only facilitated wide exposure but also enabled orbicularis oculi muscle suspension (Figure 2A).

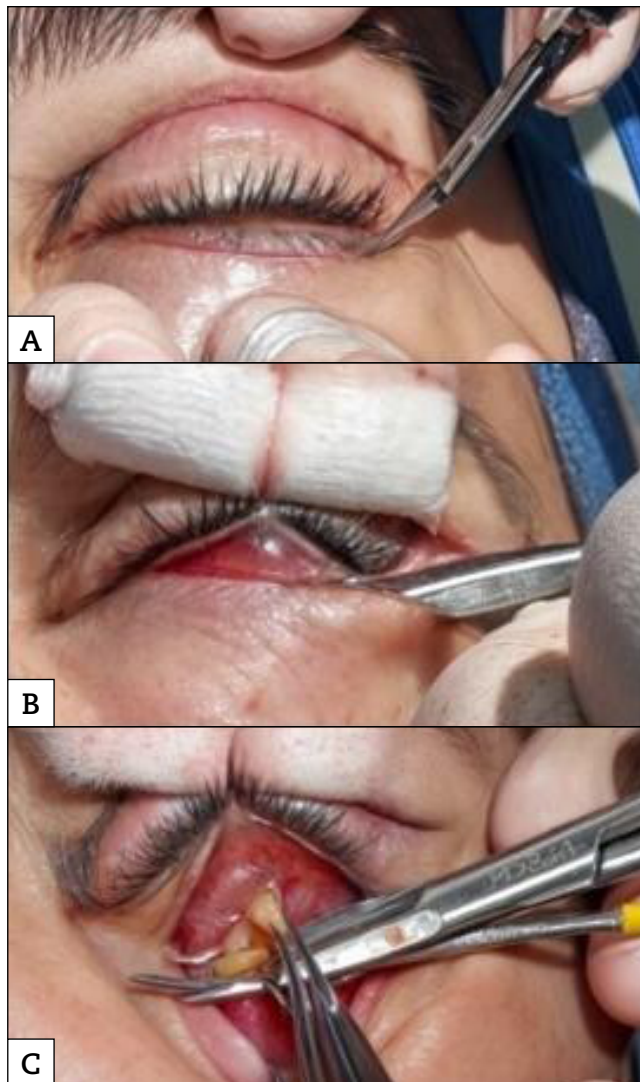


Figure 2. A: subciliary incision, elevating the skin muscle flap. B: scissors are placed in the plane between the septum and the preseptal orbicularis. C: partial excision of the orbital septum was performed, exposing the medial fat compartment of the lower eyelid. A gentle plication was performed using mosquito forceps, followed by electrocautery to cauterize small vessels before fat resection.

Curve steven scissors were used to bevel away from the pretarsal orbicularis, completing the subciliary skin incision. The scissors were then used to dissect a plane between the orbital septum and the preseptal orbicularis oculi.

Curve steven scissors are inserted below the lateral canthus to elevate the skin-muscle flap off the orbital septum in a blunt, spreading motion along the suborbicular avascular plane (preseptal space) down to the infraorbital rim. The septal orbicularis muscle is then transected using the same iris scissors (Figure 2B).

After releasing the anterior lamella, orbital fat was conservatively removed or preserved based on preoperative assessment of fat excess. Intraoperatively, the volume of fat

After partial excision of the septum, gentle pressure was applied to depress the globe, allowing for assessment of the periorbital fat and proceed to remove excess fat pads clumping it with the mosquito clamp and cutting it using stevens scissors, after cauterizing the remaining fat pad, we release the mosquito clamp as slowly as possible; This maneuver allows for identification and control of any persistent bleeding vessels, thereby helping to prevent the feared complication of retrobulbar hematoma (Figure 3).

The lateral skin-muscle flap was excised from lateral to medial, following the blepharoplasty incision and oriented parallel to the lower eyelid margin. This approach is crucial for maximizing the preservation of both skin and muscle. In all lower blepharoplasty procedures, great care was taken to avoid over resecting the lower eyelid skin (Figure 4).



Figure 3. The medial fat pad has been removed.



Figure 4. Muscle excess strip is then excised.

The orbicularis is suspended to the lateral orbital rim for additional anterior lamellar support. The mattress suture was placed through the periosteum of the lateral orbital rim using vicryl 5:0 to ensure proper posterior positioning of the lid margin against the globe (Figure 5).

The upward redrawing and suspension of the muscle reposition the sagging composite soft tissues to their normal position in the inferior orbital region, thereby strengthening lower eyelid support (Figure 6). A 7-0 prolene suture is used for skin closure in a running fashion.

Postoperative care

Routine postoperative care includes the application of lubricating tears, ophthalmic antibiotic eye drops, ice compresses and antibiotic ointment to the suture line was applied along the suture line and within the wound to minimize the risk

of crust formation and promote optimal healing. Sutures are typically removed on the eighth postoperative day. Postoperative swelling may interfere with normal tear production and flow, leading to temporary epiphora and dry eyes. One of the important things are to educate patients about the importance of frequent and generous use of artificial tears throughout the day and lubricating ophthalmic ointment in the evenings during the immediate postoperative period⁴.

A subtle ectropion may occur in the early postoperative period due to transient edema. Patients are instructed to place their ipsilateral index finger on the lower lid below the eyelashes, push it upward to meet the upper eyelid, and hold for 5 to 10 seconds. This massage should begin after suture removal and be performed four to five times daily during the first month to reduce tension on the lower eyelid, counteract the downward forces of healing, and prevent early scar formation. Vertical massage is particularly effective in treating early postoperative lower lid malposition⁴.

Statistical analysis

Statistical analysis was performed to evaluate the stability of lower eyelid position following transcutaneous lower blepharoplasty and to identify anatomical factors associated with postoperative scleral show.

Continuous variables were summarized as means $\pm$ standard deviations (SD), whereas categorical variables were expressed as frequencies and percentages. Normality of continuous variables was assessed prior to comparative analyses.

Preoperative and postoperative Marginal Reflex Distance 2 (MRD2) measurements for both eyes were compared using paired statistical testing to determine longitudinal changes in lower eyelid position. Changes in categorical eyelid position grades according to the Modified Garcia-McCollough Scale were analyzed to assess qualitative improvement or stability following surgery.

Associations between anatomical risk factors—particularly canthal tilt configuration—and the presence of preoperative scleral show were evaluated using the chi-square test of independence. This analysis was used to determine whether negative canthal tilt represented a significant predictor of lower eyelid malposition.

Agreement between clinical visual inspection and pixel-based photographic analysis in identifying scleral show was assessed descriptively to compare subjective and objective evaluation methods.

All statistical tests were two-tailed, and a p -value < 0.05 was considered statistically significant. Statistical analyses were performed using IBM SPSS Statistics software (IBM Corp., Armonk, NY, USA).

RESULTS

Between May 2022 and May 2024, a total of 95 patients underwent transcutaneous lower blepharoplasty performed by the senior author. Seventy-eight patients ($n = 78$) met the inclusion criteria and completed the mandatory 12-month



Figure 5. Orbicularis oculi muscle is suspended to the lateral orbital rim.



Figure 6. Preoperative photographs demonstrate malposition of both lower eyelids. Postoperative images show residual lower eyelid malposition, although a clear improvement is evident.

follow-up period. The peak surgical volume occurred in 2023 (48.7 %), followed by 2022 (26.9 %) and 2024 (24.4 %).

The study population had a mean age of 54.26 years (SD ± 11.09), with a female predominance. Regarding the Fitzpatrick skin phototype, Type III was the most prevalent, followed by Type II, while Types I and V were infrequently observed (Table I). Preoperative vector analysis demonstrated that a negative orbital vector defined as the anterior globe protrusion beyond the malar eminence was an infrequent finding in this cohort.

A critical distinction was noted between clinical assessment modalities. While visual inspection initially suggested a higher incidence of lower lid laxity, advanced software-based pixel analysis revealed that only 7.69 % ($n = 6$) of patients exhibited true persistent scleral show both pre- and postoperatively. This contrasted sharply with the 28.2 % initially identified by visual inspection alone. In cases where malposition was present, it was characterized as clinically mild, with a scleral show of less than 3 mm and no associated aesthetic or functional morbidity. Additionally, preoperative canthal asymmetry was identified in 20.5 % of the cohort.

Preoperatively, the canthal tilt was neutral in 53.9 % of patients, negative in 43.6 %, and positive in 2.6 %. A statistically significant association was identified between a negative canthal tilt and the presence of preoperative scleral show ($\chi^2 = 16.93$, $p < 0.001$). Specifically, 52.9 % of patients with a negative tilt exhibited scleral show, compared to only 9.1 % in the neutral or positive tilt groups, suggesting a strong anatomical predisposition. Postoperative distributions remained stable: 52.6 % neutral, 44.9 % negative, and 2.6 % positive.

The preoperative Marginal Reflex Distance 2 (MRD2) averaged 4.65 mm (SD ± 0.82) for the right eye (OD) and 4.64 mm (SD ± 0.85) for the left eye (OS). Preoperative eyelid retraction (MRD2 ≥ 6 mm) was present in 5.1 % (OD) and 6.4 % (OS) of cases (Table II).

Postoperatively, the mean MRD2 was 4.66 mm (SD ± 0.94) in the right eye and 4.61 mm (SD ± 0.93) in the left eye. While the percentage of eyes with an MRD2 ≥ 6 mm showed a nominal increase (8.9 % OD; 7.7 % OS), the change in mean values was not statistically significant ($p > 0.05$). Pixel-based image analysis confirmed that lower eyelid positioning remained stable, with no significant longitudinal variation between preoperative and postoperative measurements.

Some patients in this case series with postoperative lower eyelid malposition presented with preexisting conjunctival exposure or lower eyelid malposition prior to surgery (Figure 6).

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To further categorize these findings, a Modified García-McCollough Scale was employed to assess eyelid malposition and its longitudinal evolution. Preoperatively, while the majority of patients presented with a normal eyelid position, a subset of the cohort exhibited varying degrees of malposition, including "subtle lateral inferior displacement" and "central scleral show involving the limbus".

Postoperative evaluation demonstrated high levels of stability and instances of qualitative improvement. Specifically, several patients who preoperatively presented with Central scleral show involving the limbus (Grade III) or Subtle lateral inferior displacement (Grade II) transitioned to a Normal lid margin position at the iris level (Grade I) or a lower-grade classification following the surgical intervention. Even in the single case presenting with Frank outward eversion (Grade IV) preoperatively, the surgical approach facilitated a restoration to a normal lid margin level. These transitions indicate that the transcutaneous approach, when executed with precise structural support, not only maintains eyelid position but can effectively correct mild-to-moderate preoperative malpositions.

This corrective trend is quantitatively reflected in the Distribution of Eyelid Position Grades, where the prevalence of Grade I (Normal Position) increased from 80.8 % ($n = 63$) preoperatively to 91.0 % ($n = 71$) postoperatively, confirming a statistically favorable shift toward anatomical normalization and a 100 % resolution rate for pre-existing Frank outward eversion.

DISCUSSION

Transcutaneous lower blepharoplasty has traditionally been associated with an increased risk of postoperative complications, particularly lower eyelid malposition⁸. However, the findings of the present study suggest that careful surgical execution combined with appropriate structural support can substantially reduce these risks. The low rate of postoperative malposition observed in this cohort is consistent with previous reports demonstrating that the transcutaneous approach can be safe and reliable when performed by experienced surgeons⁹⁻¹³.

An important observation from this study is that a subset of patients presented with pre-existing lower eyelid malposition before surgery, including scleral show and unfavorable canthal tilt. This highlights the critical importance of thorough preoperative anatomical assessment, as postoperative eyelid position may reflect baseline anatomical predisposition rather than a complication attributable to the surgeon or the

Table II. Distribution and Transition of Eyelid Position According to the Modified García-McCollough Scale ($n = 78$).

Category	Preoperative n (%)	Postoperative n (%)
Normal eyelid position	58 (74.4 %)	60 (76.9 %)
Normal lid margin at iris level	4 (5.1 %)	10 (12.8 %)
Subtle lateral inferior displacement	6 (7.7 %)	5 (6.4 %)
Central scleral show involving limbus	9 (11.5 %)	3 (3.8 %)
Frank outward eversion	1 (1.3 %)	0 (0 %)
Mild eversion with tear accumulation	0 (0 %)	0 (0 %)

surgical technique itself. Failure to recognize these preoperative characteristics may lead to an overestimation of surgical complications and inappropriate attribution of responsibility. Therefore, detailed preoperative evaluation is essential not only for surgical planning but also for accurate postoperative outcome interpretation.

The addition of lateral orbicularis suspension appears to play an important role in preserving lower eyelid position and minimizing postoperative complications such as ectropion and scleral show⁹⁻¹². In the present series, lateral fixation of the orbicularis muscle to the lateral orbital rim was routinely performed without orbicularis transection, differing from techniques that advocate orbicularis myotomy or skin-muscle flaps to improve lower lid support. Despite this less aggressive approach, postoperative outcomes were highly favorable, with no cases of frank ectropion and only a small proportion of patients (7.69 %) demonstrating mild residual scleral show of less than 2 mm, which was considered an aesthetic finding without functional consequences. These findings support the effectiveness of lateral orbicularis suspension as a reliable maneuver for maintaining lower eyelid stability.

Scar quality was also favorable, with the vast majority of patients demonstrating either imperceptible or barely perceptible scars. Only isolated cases of widened or hypertrophic scars were observed, none of which resulted in functional impairment. Together with the high degree of clinical improvement observed across the cohort, these findings reinforce the safety and reproducibility of the transcutaneous lower blepharoplasty technique when appropriate structural support is incorporated.

Lower eyelid malposition remains one of the most concerning complications following lower blepharoplasty, with reported rates ranging from 5 % to 30 % in the literature¹⁰⁻²⁰. In contrast, this series demonstrated a very low complication rate, with subtle non-symptomatic malposition identified in fewer than 8 % of patients and no cases requiring revision for ectropion or severe lower lid retraction. This favorable outcome likely reflects the importance of careful patient selection, meticulous surgical technique, and structured preoperative evaluation of eyelid tone and support^{21,22}.

A particularly relevant finding in this study was the utility of the modified García-McCollough Scale (Figure 7), expanded in this investigation to include additional categories for normal eyelid position and subtle postoperative changes²³⁻³⁰. This modified classification system improved the identification of pre-existing lower eyelid malposition, allowing more accurate preoperative diagnosis in patients who may otherwise be considered normal on routine visual examination³¹⁻³⁹. Moreover, the scale provided a practical framework for anticipating postoperative outcomes by establishing realistic expectations regarding lower eyelid position. Based on this assessment, it became evident that patients with baseline malposition may not always achieve a “perfect” postoperative eyelid position; some will remain unchanged, many will improve, and only a minority may worsen. Importantly, the present series demonstrated that most patients experienced meaningful improvement, while none showed clinically significant deterioration (Figure 8). This predictive value enhances both surgical planning and postoperative interpretation, reducing the risk of attributing pre-existing anatomical characteristics to surgical failure.

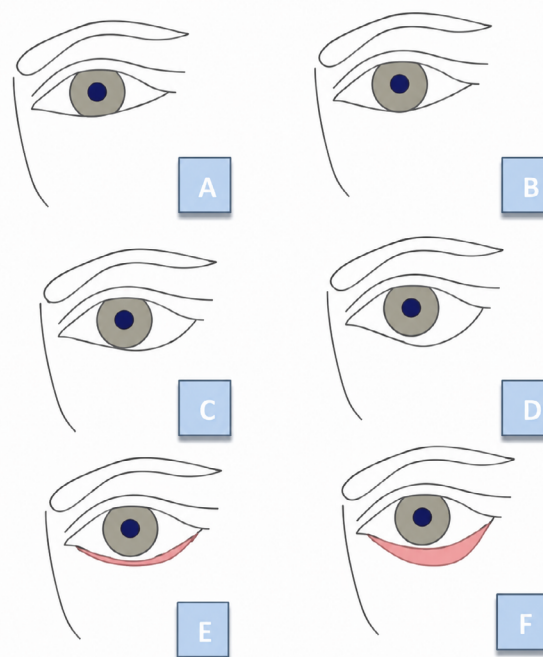


Figure 7. Modified García-McCollough Scale Results for Lower Eyelid Appearance and Grading of Postblepharoplasty Malposition: Incorporating Subtle Descent Criteria. A: normal eyelid position; B: normal Lid margin at the iris level; C: subtle lateral inferior displacement of the lower eyelid; D: central scleral show involving limbus; E: mild eversion associated with tear accumulation in the inferior conjunctival fornix; F: frank outward eversion of the lower lid with exposure of the palpebral conjunctiva.



Figure 8. Preoperative: (A-C-E-G) / Postoperative: (B-D-F-H).

These findings are particularly relevant in surgical education. Traditional transcutaneous lower blepharoplasty remains a reliable, effective, and reproducible technique that should continue to be part of the training of residents and young plastic surgeons. Although more advanced techniques may offer excellent outcomes in selected cases, they often require greater technical complexity and a steeper learning curve. Mastery of the traditional approach, combined with accurate preoperative assessment and appropriate lower eyelid support, can provide predictable aesthetic outcomes with minimal complications, as demonstrated in this series³⁹.

CONCLUSIONS

Transcutaneous lower blepharoplasty, when performed with careful preoperative assessment and appropriate lateral eyelid support, provides consistent aesthetic improvement while preserving lower eyelid stability. In this series, objective postoperative analysis demonstrated that the procedure did not increase the incidence of scleral show or clinically significant lower eyelid malposition, confirming the reliability of the technique in appropriately selected patients.

The use of a structured preoperative grading system proved valuable not only for identifying subtle baseline malpositions but also for establishing realistic postoperative expectations. This distinction is essential for differentiating pre-existing anatomical conditions from true surgical complications. When supported by precise anatomical evaluation and meticulous technique, the transcutaneous approach remains a safe, reproducible, and effective option for lower eyelid rejuvenation with a low rate of adverse outcomes.

DECLARATIONS

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Conflicts of interest: None declared.

Ethical approval: Not required.

PATIENT CONSENT

Written informed consent was obtained from all patients for the use of clinical photographs in this publication.

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