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Review

Minimizing Postoperative Scars in Upper Eyelid Blepharoplasty: A Concise Review

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Abstract

Background: Upper eyelid blepharoplasty is one of the most common aesthetic surgeries performed worldwide. The procedure consists of removing excess skin with or without muscle and/or fat from the upper eyelid by a transcutaneous approach and placement of a supratarsal crease. The surgery is performed in a cosmetically sensitive area and every attempt to avoid poor scar formation should be made. Methods: This review presents a conspectus of the existing medical literature regarding scar-avoiding strategies in upper blepharoplasty with the aim of contributing to the reduction in postoperative scar formation. The Medline, Embase, and Cochrane databases were searched on 2 September 2025. Results: The search yielded a total of 562 records, and, following screening, eleven publications were included. Conclusions: A systematic approach to pre-, intra-, and postoperative measures to minimize scarring are presented. There is a need to standardize scar assessment and reporting to facilitate inter-study comparison of effects, as well as prospective, randomized studies comparing suture materials and techniques.

Keywords: oculoplastic; blepharoplasty; scarring; cicatrix; surgical techniques

1. Introduction

Although considered a normal process in tissue repair [1], scars after surgical procedures can be aesthetically unfavorable and cause significant morbidity for the patient [2–5]. In the periocular region, scar formation can have serious consequences as even a millimeter of malposition can affect the delicate balance in the three-dimensional forces that support eye position, eyelid function, eye movements, and ocular surface homeostasis. Excessive periocular scarring can cause ectropion, entropion, eyelid retraction, and facial asymmetry [6]. These conditions, if left untreated, can potentially lead to irreversible vision loss [6].

Physiological cutaneous wound healing is typically divided into three phases: hemostasis and inflammation, proliferation, maturation and remodeling [7,8]. According to the International Scar Classification of 2019, scars are classified into immature, mature, atrophic, hypertrophic, and keloid [9]. While immature and mature scars are phases of the normal scarring process, atrophic, hypertrophic, and keloid scars are undesirable scar variants. Immature scars histologically still contain a sizeable proportion of inflammatory cells, in addition to collagen [9]. A set time limit cannot be defined by which a scar ceases to be immature as this varies from patient to patient and even from scar to scar on the same patient. The resolution of erythema, however, is reported to be a useful marker of scar maturity; a process reported to take as much as one or more years [10]. Mature scars can be white or hyperpigmented depending on the patient's skin color. Histologically, mature scars have a healed epithelium, but a disorganized collagen fiber structure. Additionally, the tissue in mature scars no longer has tissue edema as opposed to immature scars. Normal and abnormal wound healing are illustrated in Figure 1.

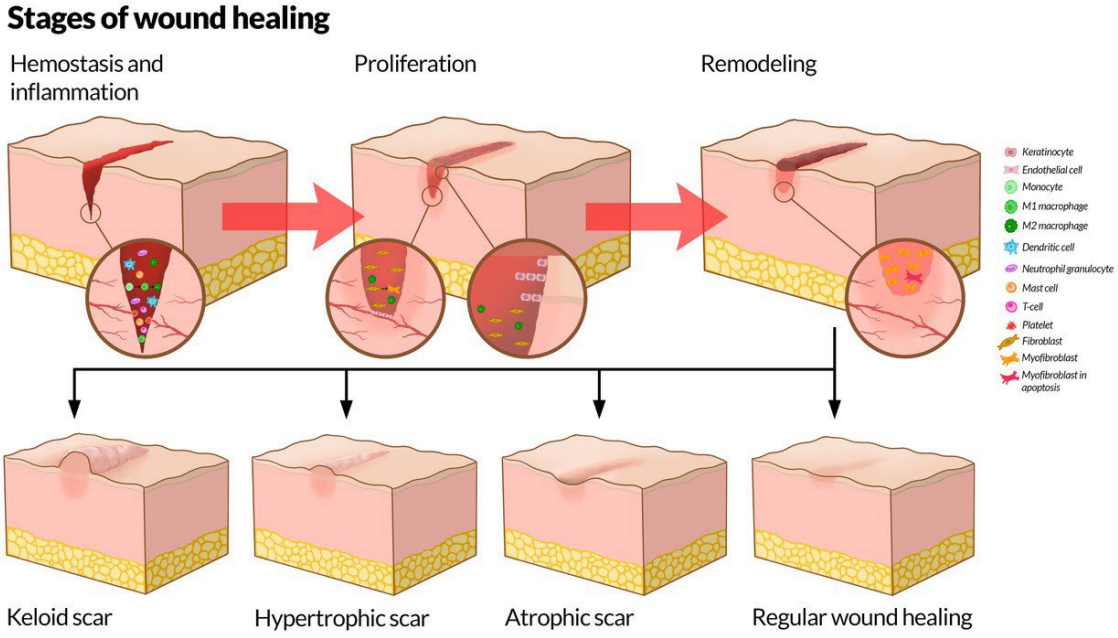


Figure 1. The stages of wound healing. Top: The stages of wound healing, including hemostasis and inflammation, proliferation, and remodeling, as well as the most important involved cells at the different stages. Bottom: Physiological and pathological results of wound healing. Illustration by Kristin Skårdal.

Sometimes, scars become atrophic, i.e., they appear thinned or depressed. This can occur due to reduced collagen synthesis and an inappropriate inflammatory response during the maturation phase. If a suture is removed too early, the healing incision may not yet have adequate collagen deposition and strength; the edges can separate or retract, leading to loss of dermal volume or incomplete filling, which could manifest as a depression [11]. Incorrect suturing (e.g., uneven edge alignment, gaps, excessive tension that strangulates tissue, or too much tension in one area) might lead to localized ischemia or inadequate collagen deposition in that zone, again predisposing to a depressed defect.

Atrophic scars are caused by loss of dermal matrix and other extracellular matrix constituents through collagen breakdown. Atrophic scars are associated with a prolonged but weak inflammatory response without proper downregulation, steroid excess (e.g., Cushing syndrome), or exogenous steroid use [12]. Contrary to atrophic scars, in which collagen accumulation is low, hypertrophic scars are characterized by their distinct clinical appearance: elevated, wide, erythematous, stiff (potentially limiting mobility), and often also itchy/painful. Hypertrophic scars are further divided into linear and widespread, and some of the hypertrophic scars can cause contractures and functional impairment. While hypertrophic scars remain within the confines of the original scars, keloids can grow in a mushroom-like fashion well beyond the original scars. Both hypertrophic scars and keloids are more common in patients with higher Fitzpatrick skin types and who have some degree of genetic predisposition [13]. Keloids can be further classified as minor or major keloids [9].

Upper eyelid blepharoplasty is one of the most commonly performed cosmetic surgical procedures in both women and men, illustrated in Figure 2 [6,14]. The indications can be either functional or cosmetic. The former might be the case if a patient's main complaint is restricted visual field due to excess skin in the upper eyelid. Clinical tests might include simple visual field examination or more advanced perimetry, depending on local guidelines. Manually lifting excess upper eyelid skin out of the way can also provide an indication of whether dermatochalasis is causing functional problems.

The inferior incision line in upper eyelid blepharoplasty follows the supratarsal crease, which varies depending on age, sex, and ethnicity. The superior incision line is based on the amount of skin to be resected. Medially, the incision should not cross a hypothetical vertical line crossing the medial punctum. Laterally, the incision should not go beyond the lateral orbital rim. Pinching with forceps along the supratarsal crease, the superior incision line should be placed along the hypothetical line causing minimal eversion of the upper eyelid lashes. With advancing age there is a loss of subcutaneous fat, deepening of wrinkles, and eyelid fat prolapse. Thus, the excision of the underlying orbicularis oculi muscle depends on tissue fullness, age, and patient preferences. The excision of adipose tissue is generally limited to tissue prolapsed anterior to the orbital rim, unless the patient has very full upper lids in need of extensive debulking. Dermatochalasis can often occur in conjunction with eyebrow and lid ptosis. Their corrections are distinctive procedures and only considerations surrounding upper blepharoplasty for dermatochalasis are addressed here.

Even though postoperative scarring is one of the most common complications after upper eyelid blepharoplasty, it is less common than after many other surgical procedures [15,16]. Although, when it does occur, it can have devastating functional as well as cosmetic effects. While the underlying reasons are not fully understood, we hypothesize that the lack of scar formation may be due to the unique properties of the eyelid skin. As is well known, eyelid skin is among the thinnest in the human body and contains no subcutaneous fat [6]. Some evidence suggests that skin thickness is inversely associated with keloid formation [17]. Nonetheless, minimizing scarring and related complications remains a worthwhile goal, and arguably a professional duty for surgeons. This is espe-

cially important because correcting periorbital scars, when they do occur, is among the most challenging tasks in oculoplastic surgery. In the present review, we synthesize the scientific literature on strategies to reduce or minimize postoperative scarring in upper eyelid blepharoplasty. To the best of our knowledge, no such review has been published to date.

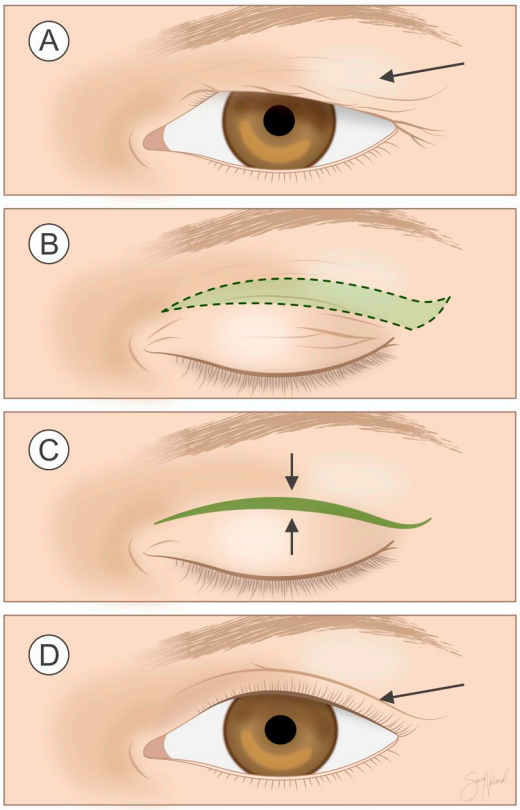


Figure 2. Procedure at a glance: In upper eyelid blepharoplasty, redundant skin, with or without a strip of orbicularis oculi and/or preaponeurotic fat (**A**), is excised from the upper eyelid as marked in the figure (**B**), and the skin is then closed (**C**) so that the surgical scar (arrow) is hidden in the upper eyelid crease (**D**). Illustration by Sara Nøland.

2. Methods

A literature search in Ovid Medline, Embase, and The Cochrane Database of Systematic Reviews was performed on 2 September 2025, using controlled vocabulary and text words expressing (blepharoplasty or dacryocystorhinostomy or eyelid surgery) AND (scar or keloid or cicatrix). No language restrictions were applied. A detailed search strategy and results are included in the Supplementary Materials. A total of 562 records were retrieved. These records were then screened manually. Records were excluded if upper blepharoplasty scarring was not discussed. Also excluded were patents, dissertations, and articles in languages other than English. Twenty-eight records remained eligible following the screening process and, finally, eleven articles were included after full-text evaluation (Figure 3).

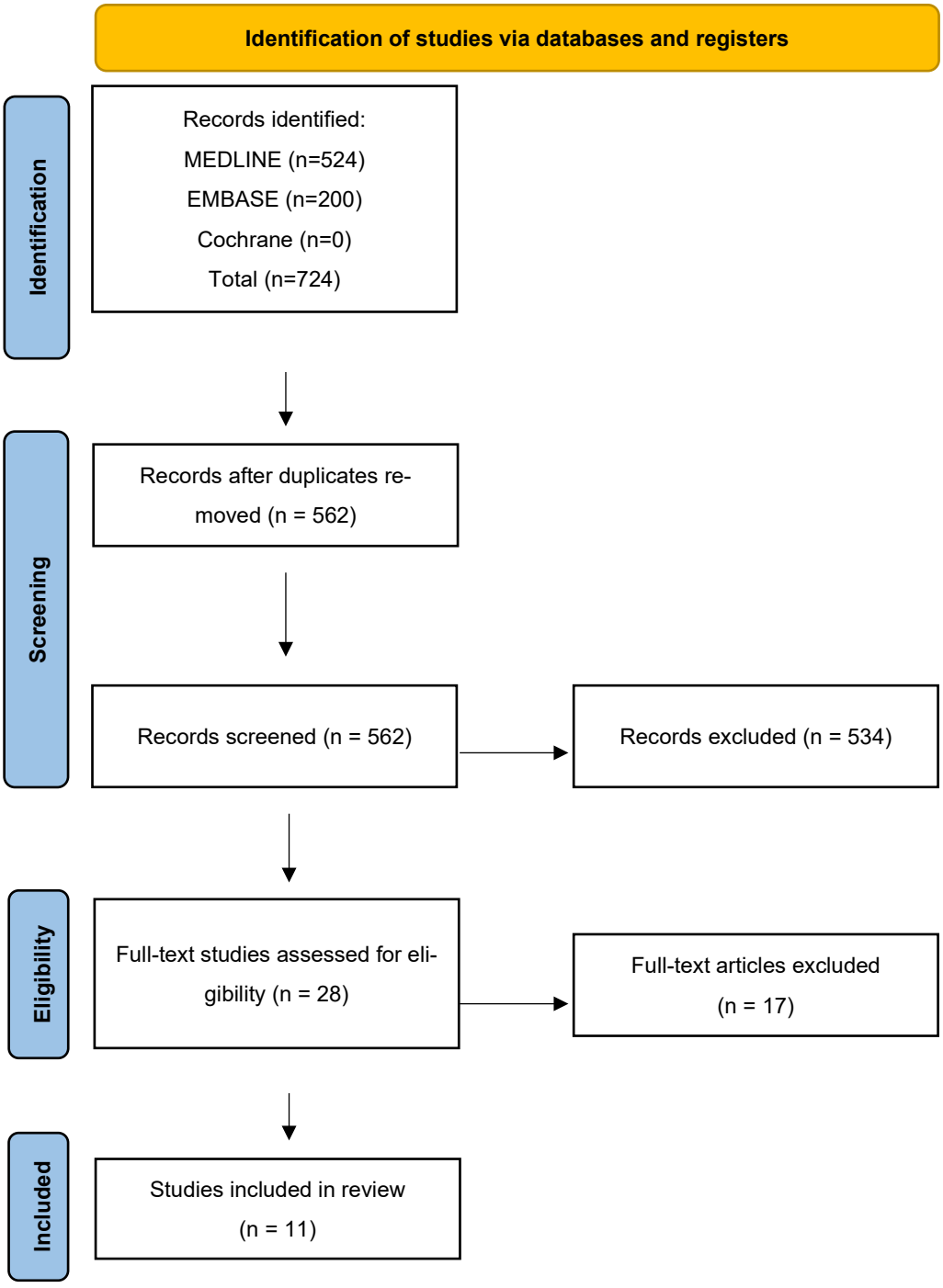


Figure 3. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of study identification, inclusion, and exclusion.

3. Results

Results are presented in Table 1. A total of eleven articles were included. The included number of participants varied from 26 to 866. Among the included studies, two were retrospective, one was cross-sectional, one was prospective, six were randomized, while one study did not report study design. Due to considerable heterogeneity concerning study design, intervention, and scar quantification, any meta-analysis was deemed impossible.

Table 1. Studies evaluating scarring following blepharoplasty.

Author/Year/Reference	Study Design	Participants (n)/Mean Age (Years)	Technique	Postoperative Care	Subjective/Objective Grading	Results
Joshi/2007/[16]	Prospective	866/52	Subcuticular polypropylene (1) vs. running locking polypropylene (2) vs. running plain gut (3) vs. fast absorbing gut with two simple interrupted polypropylene (4)	-	Unacceptable scarring defined as either hypertrophic scarring or scar unevenness	Findings in groups 1/2/3/4: milia: 2.5%/17%/6.7%/2%; standing cone deformity: 5.5%/4.4%/0%/0%; suture marks: 0%/0%/1.6%/0.4%; hypertrophic scarring: 0%/0%/2.8%/1 patient
Arat/2016/[18]	Prospective, randomized, multicenter	101/61.5	One side randomly selected for skin incision with scalpel and the contralateral side for incision with microdissection needle with electrocautery. Skin closure with interrupted 6-0 rapid Vicryl or polypropylene	One center recommended antibiotic/steroid combination ointment and two centers antibiotic only ointment on incisions twice daily for 1 week	Two blinded ophthalmic surgeons graded scarring 0–6 (6 = best) based on photographs from postoperative days 1, 7, 30, 180	No difference in scarring between the two methods of incisions
Murdock/2016/[19]	Prospective, single blind, split face	28/66.3	Bilateral blepharoplasty with removal of excessive preaponeurotic adipose tissue	One eye randomized to receive topical ointment containing growth factor and cytokines twice daily for 12 weeks. Contralateral eye remained untreated	Photographs, patient and investigator assessment performed at 6, 10, and 14 weeks, postoperatively. Scar appearance assessed by erythema, pigmentation, and thickness graded 0–5 (0 = best)	Patient self-assessment: 65% rated the scar in treatment eye as favorable. Investigator assessment: only significantly different at week 10 in favor of experimental eye

Table 1. *Cont.*

Author/Year/Reference	Study Design	Participants (n)/Mean Age (Years)	Technique	Postoperative Care	Subjective/Objective Grading	Results
Owji/2018/[20]	Prospective, randomized, double-blind	26/51.5	Blepharoplasty closed with continuous 6-0 nylon sutures. After suture removal, each eye randomized to treatment with topical onion extract or petroleum jelly for 7 weeks	Cold compress for 20 min every 2 h the first 48 h postoperatively. Erythromycin ointment twice daily until suture removal after 1 week	Evaluation by blinded ophthalmologist and oculoplastic surgeon using MSS and VAS	No subjective difference in patient satisfaction at 6-month telephone follow-up
Kalasho/2019/[21]	Retrospective	136/52.1	Blepharoplasty closed with running 6-0 polypropylene suture and approximately 4 interrupted sutures. Treatment group used silicone-based ointment twice daily for 3 months starting 2 weeks postoperatively	All patients used erythromycin ointment for 1 week. Indication for 5-FU/triamcinolone/lidocaine injections evaluated at 1, 3, and 6 months	VSS, injection given if pliability grade or height grade was 2 or higher	Experimental group: 22.9% received $\geq$1 injection; control group: 43.9% received $\geq$1 injection ($p < 0.05$). Experimental group requiring >1 injection: 6.4%; control group requiring >1 injection: 27.6% ($p < 0.05$). VSS scores not disclosed
Owji/2020/[22]	Prospective, randomized, double-blind	37/onion extract, steroid and petrolatum groups: 51.94, 49.40 and 47.00	Bilateral upper blepharoplasty closed with continuous 6-0 nylon sutures. Right eye randomized to onion extract (n = 18) or topical hydrocortisone 1% (n = 19), left eye was treated with petrolatum emollient, treatment was twice daily for 2 months	Cold compress for the first 48 postoperative hours. Erythromycin ointment twice daily until suture removal after 1 week.	Graded by two ophthalmologists after 2 months of treatment with MSS and VAS	The mean MSS plus VAS for onion extract, steroid and petrolatum were 9.08, 9.08, and 9.26, respectively. The mean VAS in the same order was 2.21, 2.14, and 2.19. All $p > 0.05$.

Table 1. *Cont.*

Author/Year/Reference	Study Design	Participants (n)/Mean Age (Years)	Technique	Postoperative Care	Subjective/Objective Grading	Results
Hollander/2022/[23]	Prospective, randomized, double-blind control trial	54/57	Group A: upper blepharoplasty with excision of skin only. Group B: upper blepharoplasty with excision of skin and strip of underlying orbicularis oculi muscle. Skin closure with running intracutaneous Ethilon 6-0	-	FACE-Q regarding general satisfaction and POSAS regarding scarring	FACE-Q improved postoperatively in both groups. FACE-Q "Satisfaction with the eye" at 12-months better in Group A. No differences between groups in POSAS
Dossan/2023/[24]	Retrospective	87/42.2	Upper blepharoplasty with simplified marking technique. Skin closure with interrupted 6-0 polypropylene sutures	-	PROM-Q and POSAS 6 months after surgery	Mean PROM-Q: 3.5; mean OSAS: 1.3; mean PSAS: 1.2
Guclu/2024/[25]	-	240/group 1: 52.9, group 2: 50.4, group 3: 49.0	Bilateral upper blepharoplasty, skin closure with continuous 6-0 propylene sutures. After suture removal, group 1 was treated with extractum cepae, sodium heparin, and allantoin mixture, group 2 was treated with silicone-based gel, and group 3 was given no additional treatment	Cold compresses recommended for the first 48 h	MSS, POSAS, and VAS at 1 and 3 months, postoperatively	MSS: "contour" score in group 2 at 1 and 3 months: 2.45/1.15 ($p < 0.05$), no other significant differences in MSS. VAS in group 1/2/3 at 1 and 3 months: 4.39/4.41/4.33 and 2.22/2.15/2.29 (all $p < 0.05$). POSAS: group 3 had a higher overall score at 3 months ($p < 0.05$)

Table 1. *Cont.*

Author/Year/Reference	Study Design	Participants (n)/Mean Age (Years)	Technique	Postoperative Care	Subjective/Objective Grading	Results
Karanfilian/2025/[26]	Prospective, randomized, double-blind	96/65	Bilateral upper blepharoplasty or ptosis repair. Randomized to apply silicone gel to one eyelid incision and petrolatum ointment to the other	Two weeks of neomycin, polymyxin and dexamethasone combination ointment twice daily	Surgeon graded erythema, elevation, pigmentation, and preference of eyelid appearance. Patient graded itching, firmness, pain, appearance satisfaction, and preferred laterality	No significant difference in any criterium for surgeon or patients
Pota/2025/[27]	Cross-sectional	55/63	Cosmetic upper blepharoplasty closed with nonabsorbable 6-0 polypropylene sutures. The study also included 50 patients treated with external DCR	-	Ophthalmologist and dermatologist evaluated scarring using the FSTS, MFWS, MVSS, and MSS at 12–36 months, postoperatively. Patient graded satisfaction using a three-question satisfaction scale	MSS and MVSS increased with increasing patient dissatisfaction. Scar scores correlated with MFWS scores. In comparison, MSS and MVSS were higher in the blepharoplasty group, with no difference in patient satisfaction

DCR: dacryocystorhinostomy; FSTS: Fitzpatrick skin type scoring; MFWS: modified Fitzpatrick wrinkle scale; MSS: Manchester scar scale; MVSS: modified Vancouver scar scale; n: number; OSAS: observer scar assessment scale; PSAS: patient scar assessment scale; POSAS: patient and observer scar assessment scale; PROM-Q: patient-reported outcome measure questionnaire; PSAS: patient scar assessment scale; VAS: visual analogue scale (0–10, 10 = worst); VSS: Vancouver scar scale; 5-FU: 5-fluorouracil; -: non described.

4. Discussion

4.1. A Systematic Approach to Addressing Surgical Scar Reduction

We deem the first and best opportunity to avoid or minimize scarring lies prior to making the incision. Hence, careful preoperative planning is key, taking into consideration factors such as the indications for surgery, comorbidities, medication use, and the patient's unique periocular anatomy. In general, a history of hypertrophic scarring or keloid formation are risk factors for future incidents [28,29]. Whether this holds true regarding upper blepharoplasty, however, remains unknown. The incidence of hypertrophic scarring following eyelid procedures in general was recently found to be ~1% (36/3650 patients), with no reports in the literature of keloid formation after cosmetic eyelid procedures performed for aesthetic purposes only [30]. The diagnosis will dictate the type and size of incision and the extent of surgical trauma. While functional and aesthetic indications typically would not necessitate large incisions, oncologic processes could require a pre-defined clinical incisional margin to also be resected, depending on the pathology. The indication for surgery thus plays a role in the type and size of the incision, the surgical defect, and the ensuing scar. Comorbidities such as diabetes can impact wound healing, and various strategies can be employed to mitigate the risks associated with performing surgeries on patients with diabetes [31]. Smoking also impacts wound healing, and the patient should be strongly advised to permanently quit smoking prior to surgery [32]. Medications such as steroids can impact wound healing by interfering with inflammation, fibroblast proliferation, and collagen synthesis [32]. Although not directly related to scar formation, antiplatelet or anticoagulants increase the risk of perioperative bleeding, which, if not controlled, can lead to unfavorable scarring outcomes. Lastly, the patient's age, race, previous surgical history, and skin condition impacts their unique periorbital physiology and anatomy, which requires a personalized approach to minimize postoperative scarring.

The second opportunity we consider to avoid or minimize scarring is during the intraoperative period, when the incision, suture materials, degree of iatrogenic trauma, and ensuing reconstruction should be methodically planned. Attention should be given to reconstruction of anatomic layers, maintenance of anatomical support structures, and skin closure with wound edge eversion.

The postoperative period is the third and final opportunity to minimize scarring and has been the focus of scar-reducing strategies for decades. Examples include petroleum jelly, negative pressure therapy, creams, silicone gel sheets, laser, dermabrasion, and glucocorticoid injections [33].

Acknowledging this systematic three-step approach in addressing scar reduction, the included studies in this review will now be discussed.

4.2. Preoperative Considerations in Minimizing Scarring

4.2.1. Incision Planning

Placement of incision and excision are crucial steps of preoperative planning. The incision for upper eyelid blepharoplasty is usually hidden in the natural upper eyelid skin crease (the skin crease separating the upper eyelid skin fold from the flat pretarsal component of the upper eyelid) [6]. Optimal preoperative markings are important. The shape and extent of the preoperative markings depend on age, amount of skin to be excised, and ethnicity [14,34]. A lenticular, or less commonly, trapezoid shape, is used. We recommend marking the incision with a thin-tipped surgical marker prior to injecting local anesthetic. Modifying established routines based on local considerations and individual anatomical characteristics can improve patient satisfaction and reduce the risk of unsightly scarring and other unwanted postoperative effects [24].

4.2.2. Hemostasis

Intra- and postoperative bleeding and edema increase the risk of wound dehiscence and, thus, of scarring [6]. Medications with anticoagulant properties should be noted and preferably discontinued preoperatively, if considered safe. Platelet inhibitors should be stopped 7–10 days prior to surgery [35]. It is important to note that not all patients consider over-the-counter medications such as aspirin relevant, and their use should be specifically queried. Non-steroidal anti-inflammatories may affect hemostasis and should be discontinued 3–4 days preoperatively. Warfarin should be stopped 4–5 days before the operation. Novel oral anticoagulants have differing half-lives and should be evaluated individually. No anticoagulant medication should be discontinued without consulting with the prescribing internist or cardiologist, and the risk versus benefits of discontinuation should be considered.

To achieve the greatest extent of hemostatic effects, it has been contended that local anesthetic agents should contain epinephrine (1/100,000) and be injected 10 min prior to making the first incision [6]. Novel research, however, indicates that maximum hypoperfusion from epinephrine is reached as early as two minutes following injection [36].

4.3. Intraoperative Considerations in Minimizing Scarring

4.3.1. Tranexamic Acid

Intraoperative bleeding may prolong the duration of surgery, healing, and recovery, as well as increase the use of intraoperative electrocautery, increasing scar formation [37]. The use of preoperative intravenously administered tranexamic acid (TXA) may reduce intraoperative blood loss as well as postoperative ecchymosis or edema in general surgery [38], facial plastic surgery [39], and blepharoplasty [40]. The safety and efficacy of subcutaneous or topical TXA administration in blepharoplasty, however, requires further consideration, although some studies have shown promising effects on other surgical procedures [41]. A recent study reported decreased postoperative edema and ecchymosis among patients administered subcutaneous TXA [40], another study found no difference in total blood loss or postoperative ecchymosis or hematoma [37], while a third study discovered increased bleeding among patients administered TXA in lidocaine with epinephrine when compared to lidocaine with epinephrine alone [42]. Taken together, TXA administered intravenously has superior efficacy compared to subcutaneous injection, but further studies are needed as the literature regarding subcutaneous and topical administration remains scarce.

4.3.2. Suture Materials and Suture Techniques

Several approaches, such as running or interrupted sutures and various suture materials exist and are reported interchangeably in the literature. There is, however, seemingly little scientific evidence available regarding the choice of suture materials and technique [14,34], with the choice often depending on the surgeon's personal preference [6]. Only one study was identified examining this [16]. Based on the limited available evidence, running plain gut sutures cause the highest degree of erythema and scarring, while running locking polypropylene sutures cause more milia, and subcuticular polypropylene more standing cone deformities [16]. The reason for a higher degree of scarring with running plain gut is unknown but might be related to an increased degree of tissue reaction and inflammation [43]. There is a clear need for further research of this important topic.

4.3.3. Scalpel vs. Microdissection Needle

Various means of making skin incisions during blepharoplasty have been described, such as carbon dioxide laser, microdissection needle, and cold scalpel [44,45]. Despite the risk of incisional bleeding, the scalpel is often preferred as there has been concern

of increased scarring from thermal damage following diathermy and the lack of tactile feedback from carbon dioxide lasers [45,46]. Indeed, histologic analysis revealed substantial thermal injury and necrosis resulting from carbon dioxide laser, and, to a lesser extent, microdissection needle use in specimens from upper blepharoplasty [18,47]. These changes were not found in samples excised with a cold scalpel. Conversely, no clinical differences in scar cosmesis or ecchymosis were noted when comparing microdissection needle to scalpel [18]. Only one clinical study comparing incisional instruments was identified [18], which highlights the need for further, prospective randomized studies.

4.4. Postoperative Considerations in Minimizing Scarring

Despite the importance of the postoperative period in cicatricial development and the plethora of suggested strategies to reduce postoperative scarring, no clear postoperative standard of care has been established for upper eyelid blepharoplasty [22,48]. The application of cold compresses for the first 48 h and elevation of the head to reduce swelling and ecchymoses are often advised [34]. The use of prophylactic antibiotics and corticosteroids vary. Tobramycin, chloramphenicol, or tobramycin/dexamethasone combination ointment are common choices [34,48]. Among the studies included herein, three applied topical antibiotics and none reported the use of topical corticosteroids as part of the standard postoperative regimen [20–22]. None of the included studies evaluated the effect of postoperative antibiotics on scar formation.

Hyaluronic acid, growth factors, and cytokines are available in commercial ointments and are involved in the wound-healing process and fetal scarless healing [49,50]. Based on the included studies, ointment containing growth factors and cytokines might lessen early phase erythema and pigmentation, but it does not seem to have an impact on the final scar [19]. Application of a silicone-based cream containing growth factors, hyaluronic acid, and vitamin C decreased the incidence of intralesional 5-fluorouracil/triamcinolone injections [21]. Interestingly, no clinical differences were found between onion extract, hydrocortisone, and petroleum jelly [20,22]. Nor were differences found between silicone gel without additional growth factors when compared to petrolatum ointment [26].

Thus, the use of scar creams during the wound-healing phase appears beneficial, as they may reduce initial redness and limit overall scar development. However, it remains uncertain whether any particular ointment is superior to others.

Wound dehiscence increases the risk of unfavorable scarring but is thankfully rare in upper blepharoplasty. The prevalence has been reported as 1–2% [51,52], at an average of nine days, postoperatively [51]. Risk factors include male gender, history of cigarette smoking, and fast-absorbing plain gut suture (compared to polypropylene) [51]. Interestingly, common risk factors such as age, hypertension, diabetes, and heart disease did not pose an increased risk of wound dehiscence. Based on surgeon assessment of wound tension, the addition of subcutaneous, buried sutures laterally might be preventative for lateral wound dehiscence [52].

4.5. Methodological Considerations and Limitations

The amount of scarring in the included studies is generally low, with a high degree of patient satisfaction. Lee et al. reported mild scarring among 0.6% of patients [53], while Joshi et al. reported unsightly scarring in 0.7% of patients [16]. The comparison of results across studies is hampered by the lack of standardized reporting. Among the nine included studies, nine different ways to quantify scar signs and symptoms were applied. With the exception of one study reporting 12-month follow-up [23], most of the included studies had short follow-up periods of 2–6 months. This timeframe is generally too short to make any

final assessment of scars and decisions on necessary intervention. Future studies should strive to implement longer follow-up periods.

This review is subject to publication bias as all strategies to minimize scarring in upper eyelid blepharoplasty are not expected to have been published.

5. Conclusions and Future Perspectives

Scar formation following upper eyelid blepharoplasty is generally limited and the procedure has a high degree of patient satisfaction. Although it is difficult to completely avoid postoperative scarring, several pre-, intra- and postoperative measures can be employed by surgeons and patients in order to minimize the postoperative cicatricial burden. We recommend a systematic approach where the surgeon carefully evaluates these elements with the patient. Preoperative smoking cessation, evaluation of patient medications and incision planning, careful choice of suture materials and techniques, as well as minimizing postoperative swelling and risk of infection are of particular importance. Future studies should attempt to standardize scar assessment and reporting to facilitate inter-study comparison of effects. Moreover, additional research is needed concerning postoperative antibiotics, corticosteroids as well as suture techniques and suture materials. It is hoped that the discussion presented herein may aid surgeons to improve, modify, and even develop new and innovative techniques to minimize scarring and improve patient satisfaction.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/surgeries6040093/s1.

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