



GLABELLAR FLAP RECONSTRUCTION FOR DEFECTS BELOW MEDIAL CANTHUS

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ABSTRACT

Background: Glabellar plastic is a method used for reconstructing the medial defects that use the available surrounding tissue, and in particular, that of the glabellar region. Most authors are of the opinion that this plastic is suitable for defects that reach the medial canthal area and do not pass down to the lower eyelid.

Aim: To present the glabellar flap technique as an option for the reconstruction of defects that extend below the medial canthus, which is an application outside the recommended indications of this technique.

Results: The postoperative outcome was good in all patients. Positional anomalies are within the limits of functional comfort. None of the patients requested postoperative cosmetic correction of the surgical defect.

Conclusion: We demonstrated the possibility of using this technique below the level of the medial canthus. It carries risks for the appearance of positional abnormalities of the eyelids after surgery, but if the influence of laxity, skin texture and shape of the operative defect is properly taken into account, this technique provides a good alternative to combined surgery.

Keywords: glabellar flap, oculoplastic surgery, lower eyelid, basal cell carcinoma, surgical reconstruction,

BACKGROUND

Glabellar plastic is a method of reconstructing medial defects that utilises the available surrounding tissue, particularly that of the glabellar region [1, 2]. Most authors are of the opinion that this plastic surgery is suitable for defects that reach the medial canthal region and do not extend down to the lower eyelid [2, 3]. This position is determined by the fact that the skin of the glabella is slightly rougher than that of the lower eyelid and, when displaced and over a defect that extends to the lower eyelid, causes positional anomalies - mainly ectropion - during healing [4-6]. We also share this opinion but believe that there is a small proportion of patients in whom these positional anomalies do not occur [7]. Proper refinement of these patients is the key to the success of this technique outside of the recognised indications.

AIM

To present the glabellar flap technique as an option for the reconstruction of defects that extend below the medial canthal tendon, which is an application outside the recommended indications for this technique.

METHODS

Retrospective observation of 18 patients (14 men and 4 women) who underwent surgery at the Eye Clinic - Pleven over a period of 5 years. In all patients, a tumour was excised in the region of the medial canthus (Fig.1). Basal cell carcinoma (BCC) was detected histologically in all patients. The surgical defect extended below the medial canthus in all patients. All underwent glabellar plastic surgery. Patients were followed for at least 6 months.

Fig. 1. Deffect exteds under medial canthal tendon.



RESULTS

In all 18 patients, the postoperative outcome was good. Positional anomalies are within the limits of functional comfort. None of the patients requested postoperative cosmetic correction of the surgical defect.

In the first postoperative days, the cosmetic results are not promising, and novice surgeons would be worried (Fig 2-4), but by the 6th month, the cosmetic result is between good and excellent (Fig 5). In the first year, the col-

our and texture of the flap and the adjacent skin are almost equal. Excision lines remain lighter, but if treated with a UV factor >30, they remain a colour similar to that of the surrounding skin (Fig 6).

Fig. 2. Plastic covers mainly the lower eyelid.



Fig. 3. Plastic with bipedicular flap covering both eyelids.



Fig. 4. Plastic reaching below the orbital rim and covering the malar pad.



Fig. 5. Postoperative result at 4 months in the patient of Fig. 2.



Fig. 6. Postoperative outcome at 6 months for the patient in Fig. 4.



DISCUSSION

The glabellar flap technique is a technique for reconstructing defects in the medial canthus. It is a V-Y reconstruction and is not new in oculoplastic surgery [2, 3, 5, 6, 8-11]. Many authors, including us, have described the various advantages of this technique [7]. The general opinion is that this technique is not suitable for defects involving the lower eyelid or extending below the medial canthus.

This statement is necessitated by the fact that glabellar plastic uses skin from the glabella and forehead, which has a different texture to the eyelids, especially the lower eyelid. The different texture leads to healing defects, which we call positional anomalies. These are rough cicatrices that cause the eyelids to retract. The most common are ectropion, ptosis, but

not infrequently, entropion and retraction [1, 12–14].

We also share this stance. However, over the years, results have indicated that this technique can also be used for defects reaching the lower eyelid. We have observed and described several of them, but in recent years, the number has increased and made the results much more definite.

Of course, most of the medial defects reconstructed with glabellar flap were mainly in the medial margin, and when they extended below it, a combined technique with glabellar flap or a completely different technique was used. However, the number of patients reconstructed with only glabellar flap is increasing in our practice, and this is a significant fact ($p < 0.01$) considered over 20-year period. In this follow-up, we have included patients from the last 5 years due to the availability of better video documentation.

For the patients with a defect that exceeds the medial canthus, we tried to answer the question: “Which patients are practically suitable for the sole application of glabellar plastic, and in which case is another technique required?”. The answer to this question was not easy and is still not definitive. However, we believe that the laxity of the lower eyelid, the texture of its skin and the shape of the defect are decisive factors.

If we consider these three things separately, we can say the following: The laxity of the lower eyelid is decisive. Greater laxity counteracts the constriction of the newly formed connective tissue during healing. In other words, the presence of a large laxity of the lower eyelid allows us a good position of the eyelid after its healing in the presence of the glabellar flap.

The skin texture of the two anatomical regions is different. This, in turn, is again the reason for the occurrence of positional anomalies during healing. As a result of the constriction, the eyelid pulls against the rougher and thicker skin. Thinning of the glabellar flap will, therefore, greatly reduce this effect. The use of glabellar flap in the area of the medial canthus, as indicated, takes advantage of the anatomical strength of the medial ligament, which, due to its anatomical fixation to the periosteum of the bone, does not allow the eyelid to be pulled against the rougher glabellar skin. In this regard, when

using the glabellar flap below the level of the medial canthus, it would benefit positively from a mattress suture in the area of the canthus, which will keep the glabellar flap from shortening too much.

The shape of the defect is of great importance for the choice of surgical technique. A suture that exerts horizontal traction on the lower eyelid will reduce retraction, and a suture that exerts vertical traction medially on the lower eyelid will reduce the likelihood of ectropion. Given these basic rules of reconstructive surgery, we could say that a teardrop-shaped medial defect can only be reconstructed with glabellar flap only.

We believe that if surgeons properly consider these three indicators, they can trust the glabellar flap more and more, even outside its main indications.

CONCLUSION

Despite the generally accepted rule of thumb to use the glabellar flap technique for defects that extend at most to the medial margin, we have shown the possibility of using this technique below the level of the medial margin. This carries risks for the occurrence of positional anomalies of the eyelids after surgery, but if the influence of laxity, skin texture and the shape of the surgical defect is properly considered, this technique offers a good alternative to combined surgery.

Statement of Ethics

The study was conducted in accordance with the principles for human experimentation as defined in the Declaration of Helsinki, local Good Clinical Practice guidelines and local Medical University of Pleven institution guidelines (Ethics Committee Approval No. 716-KENID/12.1.2023).

Informed Consent

Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images.

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