

How to Correct Frontal Facialis Palsy After Radical Tumour Surgery: Upper Blepharoplasty and Direct Brow Lift

Radical surgery of fronto-temporal non-melanoma skin cancer (NMSC) sometimes causes palsy of the frontal facialis branch. Patients may experience visual impairment due to brow and upper eyelid ptosis. Since NMSC predominantly affects elderly people, the corrective surgical procedures have to be adapted to age, comorbidities and individual needs. The direct brow lift and the upper lid blepharoplasty are two reliable and safe surgical techniques with proved efficacy. Here we present our way to deal with post-surgical brow and lid ptosis.

KEYWORDS: Basal cell carcinoma, brow ptosis, corrective surgery, direct brow lift, lid ptosis, non-melanoma skin cancer, squamous cell carcinoma, upper lid blepharoplasty

INTRODUCTION

Non-melanoma skin cancer (NMSC) is a disease affecting mostly adult patients in their second half of life. Chronic exposure to ultraviolet light is a major factor contributing to NMSC. Lighter skin complexion is an endogenous risk factor. Forehead and temple are commonly affected by the major types of NMSC, i.e. basal cell carcinoma (BCC) and squamous cell carcinoma (SCC).^[1,2] NMSC causes estimated annual hospitalization costs of about €130 million for Germany.^[3]

The treatment of choice in particular for larger tumours is Mohs surgery. In the case of deeper infiltration of the subcutaneous tissue, the preservation of the first branch of the facial nerve is not always possible to achieve a R0 resection (complete removal with tumour-free excision margins). In these patients, upper lid ptosis and/or brow ptosis may develop after surgery.^[2] The correction of resulting functional impairment, especially of the lateral view, has priority. Aesthetic considerations should

support the rehabilitative approach. Since most patients are elderly with significant dermoheliosis of facial skin, often dermatochalasis and significant comorbidities, the procedures should not add another significant risk.

CASE REPORTS

Case 1

A 61-year-old male patient presented with a large and deep infiltrating BCC of the left temple. After Mohs surgery, wound healing was unremarkable. However, a combined brow and upper lid ptosis had developed and hampered his lateral view [Figure 1a]. On the other hand, he needed his car and so rehabilitative surgery was planned.

Since he had a blepharochalasis, we used a combined approach, i.e. blepharoplasty of the upper lid and direct brow lift. The procedures were performed under local anaesthesia. Because there was no prolapse of the adipose tissue, a simple skin resection of the upper lid skin was performed and sutured with 4-0 Prolene (Ethicon, Norderstedt, Germany) sutures.

For the brow lift, an elliptical incision on the apical border of the brow was performed [Figure 1b]. The height of the incision was measured before by pulling the brow to its intended height and marking the position. After the removal of skin, the deeper layers were carefully

Access this article online	
Quick Response Code: 	Website: www.jcasonline.com
	DOI: 10.4103/0974-2077.91254

Uwe Wollina

Department of Dermatology and Allergology, Hospital Dresden-Friedrichstadt, Academic Teaching Hospital of the Technical University of Dresden, Friedrichstrasse 41, Dresden, Germany

Address for correspondence:

Prof. Uwe Wollina, Department of Dermatology and Allergology, Hospital Dresden-Friedrichstadt, Academic Teaching Hospital of the Technical University of Dresden, Friedrichstrasse 41, Dresden 01067, Germany. E-mail: wollina-uw@khdj.de

removed down to the insertion of the muscle fibres of the venter frontalis. The vessels including the arteria conjunctivalis posterior were carefully preserved. We deepened the lateral part to the areolar tissue superficial to the periosteum. The skin adjacent to the incision borders was loosened by blunt preparation to ensure a tension-free suturing. The frontalis muscle was resected and the ends were sutured by 4-0 PDS (Ethicon) sutures to position the brow [Figure 1c, d]. Wound

closure was done by suturing the subcutaneous tissue with deep knots (4-0 PDS) and final wound closure with cutaneous 4-0 Ethilon (Ethicon) sutures [Figure 1e].

After the removal of the suture, we recommended a preventive topical scar treatment (Cicaplast®; La Roche Posay, Asnieres, France). There was no significant scarring or other late adverse effects. The patient was very pleased with the outcome.



Figure 1: Patient 1, brow and upper lid ptosis after radical BCC excision. (a) Brow ptosis on the left side of 6.6 mm. (b) Direct brow lift with oval skin excision demonstrating adipose tissue. (c) Preparation of the frontalis muscle. (d) After suturing the frontalis muscle, but before subcutaneous wound closure. (e) Final wound closure of the direct brow lift and the upper lid blepharoplasty

Case 2

An 86-year-old patient presented with a large SCC in the left fronto-temporal region.

Mohs surgery was performed and wound healing was unremarkable. Four weeks later, she presented with a

mild brow ptosis and an upper lid ptosis combined with blepharochalasis [Figure 2a-c].

She did not want to have a correction of the brow but the upper lid. In this case, we performed blepharoplasty under local anaesthesia. After the resection of the upper

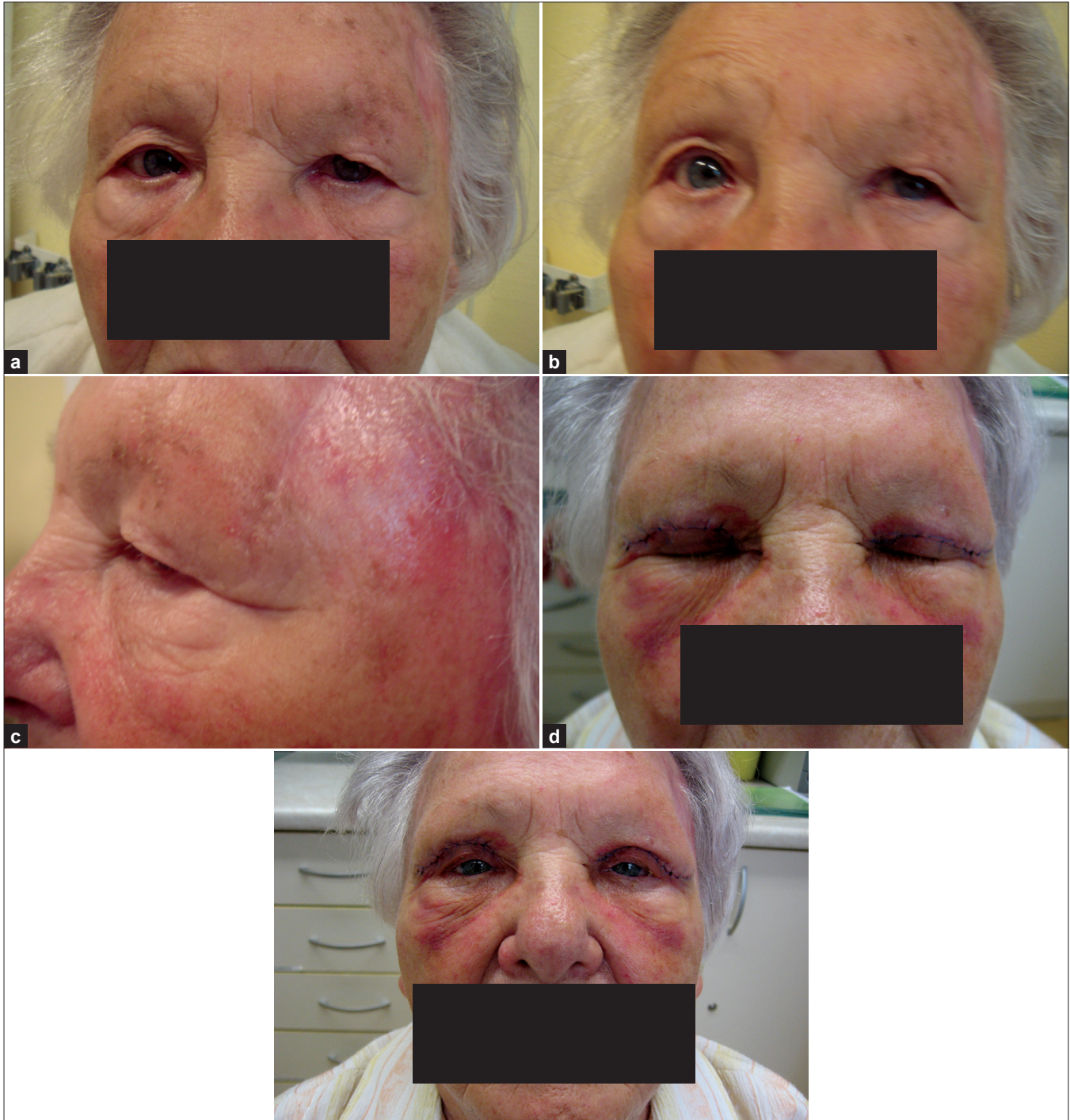


Figure 2: (a) Patient 2 after radical excision of a SCC with upper lid and brow ptosis (1.8 mm in rest) on the left side. (b) During upwards motion of the frontalis muscle, the left side does not improve. Frontal view with lateral visual impairment. (c) Lateral view showing the prominent lateral blepharochalasis. Five days after bilateral upper lid blepharoplasty: frontal look with (d) closed eyes 1 week after surgery with sutures in place and (e) with open eyes demonstrate an acceptable aesthetic and functional outcome

lid skin with a monopolar radiofrequency tip (Ellman™ device [Ellmann Int., Oceanside, NY; USA], “cut and coag” mode), conservative fat pad removal was done by the incision of the medial and central septum. The wound was closed with running sutures with 4-0 Ethilon. Preventive topical scar treatment was recommended (Cicaplast®; La Roche Posay). The patient was pleased with the outcome during the follow-up period of 2 years [Figures 2d-e].

DISCUSSION

Our department is a centre for dermatology and dermatology-surgery with inpatient and outpatient service and interdisciplinary tumour boards. We are part of the Dresden tumour registry. We perform more than 3000 NMSC surgeries per year. Mohs surgery or delayed Mohs surgery is the golden standard for treatment. Careful surgical removal ensures a low rate of tumour recurrence and surgical complications.^[2]

As long as the R0 resection is the primary goal of treatment, the preservation of facial (or other) nerves is not always possible. Therefore, we need rehabilitative tools to deal with post-procedural palsy.

In this report, we focussed on two procedures that are useful to correct upper lid and brow ptosis after NSCM tumour surgery. The approaches aim to correct the resulting impairment, i.e. lateral or frontal limitations in eye view. Since most of the patients are older than 60 years, often with significant comorbidities, the surgical approach has to respect this. Aesthetic concerns are less important compared to the surgical correction of the ageing face without NMSC and palsy. There are a number of factors that need consideration when planning corrective surgery: age, ethnicity, skin type, forehead furrows, degree of visual impairment, and dermoheliosis.^[4]

The use of simple but effective procedures that will not add an additional risk for the multi-morbid patients is our practical approach. Under this view, the direct brow lift is a very useful technique.^[5] We use a modification with suturing the frontalis muscle to obtain a significant lifting without placing any tension on the cutaneous sutures. A necessity of the technique is the careful avoidance of the dissection of the supraorbital neurovascular bundle. Other adverse effects are rare and manageable. To ensure an aesthetic scar, preventive topical treatment by appropriate scar ointments or gels is recommended.

The procedure can be combined with upper lid blepharoplasty to further improve the functional outcome. The trans-blepharoplasty browpexy is another reliable technique.^[6] It has been suggested that patients with prominent brow fat pads will benefit from this

technique.^[7] In a comparative study of brow lifting techniques, Georgescu *et al.* observed a mean brow elevation of 1.74 mm using this method. In the particular situation, however, the limitations in the brow lift make this attempt less attractive for rehabilitative surgery.^[8]

An endoscopic brow lift results in greater amplitudes of brow elevation (3.44 mm).^[8] The procedure is more sophisticated than the direct brow lift but will be preferred in aesthetic indications. The direct brow lift, on the other hand, can also be employed for severe brow ptosis of >4 mm.^[5]

In some older patients, however, blepharoplasty alone can achieve a functional and aesthetic outcome that satisfies the patient without adding a surgical risk to his or her pre-existent comorbidities. From the functional point of view, upper lid blepharoplasty is not dependent on the resection of the orbicularis oculi muscle.^[9] Recently, a less aggressive surgical approach to upper eyelid ptosis has been favoured for blepharoplasty.^[10]

Their way of dealing with post-surgical palsy has to be discussed with patients to identify their needs and complaints. Keeping it simple often is a good compromise between the attempts of the surgeon to be (almost) perfect and the reality of the patient.

REFERENCES

1. Leiter U, Garbe C. Epidemiology of melanoma and nonmelanoma skin cancer – the role of sunlight. *Adv Exp Med Biol* 2008;624:89-103.
2. Wollina U, Pabst F, Krönert C, Schorch J, Haroske G, Klemm E, *et al.* High-risk basal cell carcinoma: An update. *Expert Rev Dermatol* 2010;5:357-68.
3. Stang A, Strausberg J, Boedeker W, Kerek-Bodden H, Jöckel KH. Nationwide hospitalization costs of skin melanoma and nonmelanoma skin cancer in Germany. *J Eur Acad Dermatol Venereol* 2008;22:65-72.
4. Meltzer NE, Byrne PJ. Management of the brow in facial paralysis. *Facial Plast Surg* 2008;24:216-9.
5. Booth AJ, Murray A, Tyers AG. The direct brow lift: Efficacy, complications, and patient satisfaction. *Br J Ophthalmol* 2004;88:688-91.
6. McCord CD, Doxanas MT. Browplasty and browpexy: An adjunct to blepharoplasty. *Plast Reconstr Surg* 1990;86:248-54.
7. Cohen PD, Reiffel AJ, Spinelli HM. Browpexy through the upper lid (BUL): A new technique for lifting the brow with a standard blepharoplasty incision. *Aesthet Surg J* 2011;31:136-9.
8. Georgescu D, Anderson RL, McCann JD. Brow ptosis correction: A comparison of five techniques. *Facial Plast Surg* 2010;26:186-92.
9. Damasceno RW, Cariello AJ, Cardoso EB, Viana GA, Saki MH. Upper blepharoplasty with or without resection of the orbicularis oculi muscle: A randomized, double-blind left-right study. *Ophthal Plast Reconstr Surg* 2011;27:195-7.
10. Naik MN, Honavar SG, Das S, Desai S, Dhepe N. Blepharoplasty: An overview. *J Cutan Aesth Surg* 2009;2:6-11.

How to cite this article: Wollina U. How to correct frontal facialis palsy after radical tumour surgery: Upper blepharoplasty and direct brow lift. *J Cutan Aesthet Surg* 2011;4:201-4.

Source of Support: Nil. **Conflict of Interest:** None declared.