Reconstruction and Recovery After Massive Burn

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**Background:** Forty years ago, a 33-year-old female suffered a 35% total body surface area burn after the car in which she was a passenger caught fire in a rear-end collision. She experienced second- and third-degree burns of her face, head, back, arms, and hands.

**Methods:** After immediate burn resuscitation, the patient underwent approximately 40 reconstructive procedures over the course of the first 17 years after her burns.

**Results:** While finding social situations difficult to endure, the patient developed tools to help her face the public.

**Conclusions:** These tools included confident body language, verbal responses, and makeup application. This case report details surgical procedures the patient underwent and her own lasting contribution through establishing the first hospital-based Image Enhancement and Behavioral Skills program along with her extensive work with the Phoenix Society for Burn Survivors. (Plast Reconstr Surg Glob Open 2018;6:e1916; doi: 10.1097/GOX.0000000000001916; Published online 14 September 2018.)

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**CASE STUDY**

A 33-year-old junior high school teacher and tennis coach was a passenger in a sports car that was rear-ended while stopped at a red light, resulting in a gas tank explosion. She was unconscious as a passing motorist pulled her to safety. She arrived at the University of California, Irvine, Medical Center with 35% total body surface area burns of her face, scalp, trunk, upper and upper extremities, including both hands. After her initial admission, she remained an inpatient for 2 ½ months (Figs. 1, 2).

**BURN RECONSTRUCTION AS AESTHETIC SURGERY**

**Assessment of Patient’s Burns**

The patient was a young, unmarried woman, and an aesthetic approach, while always a priority, would have a lasting impact on the direction of her life. The most life-impacting were the third-degree burns affecting most of her face and her right hand.

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**Fig. 1.** The patient as she looked before her massive burn.

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SURGICAL COURSE

None of the digits of her right hand were salvageable, and they were amputated at her initial admission. Silastic joints were placed in the interphalangeal joints of her left hand. After initial coverage and healing of her burns with full- and split-thickness skin grafts and local flaps of the head and neck, the long-term goal was to reconstruct the patient's face using aesthetic principles. Within the first 2 years, a composite conchal graft was used for bilateral alar reconstruction. Full-thickness skin grafts for coverage of most of her face and for release of ectropion of the lower eyelid and upper and lower lips were harvested from the abdomen and closed like an abdominoplasty (Fig. 3).

Facial Reconstructive Surgical Course

By 13 years after her burn, the patient was well-healed, but she had facial burn contractures and scalp alopecia. Upper and lower blepharoplasties with removal of fat, shortening of the upper lip, and refinement of the contours of the nasolabial folds and alar creases by debulking and creating the appearance of natural depressions all contributed to improving the facial contours.

Seventeen years after her initial burn, the patient presented for further refinement of her facial scars and contours. Her scalp was notable for an area of scar alopecia in the midline measuring 15 × 6 cm, and she had heavy ridging of her upper lids and slightly stenotic nostrils due to the thickness of the previous skin grafts.

The scalp scar was excised and closed with an advanced flap from the parietal scalp. The scar excision of the face was approached like a facelift, and the refinements improved the aesthetic outcome (Fig. 4).

HELPING OTHERS

During her recovery, Barbara Kammerer Quayle defined the elements that created barriers for burn survivors to reenter the community. Recognizing ways to take control of social situations improved her confidence. She developed the STEPS tool (S: Self-talk, T: Tone of voice, E: Eye contact, P: Posture, and S: Smile), and she created and rehearsed responses to the questions that strangers often asked her (Rehearse Your Response). She learned to enhance her surgical results by applying makeup to even out the color of her face and to create symmetric lips and eyebrows. By supporting other burn survivors and teaching them by means of a hands-on approach how to control their actions and enhance their appearance through
posture and makeup, she not only eased their reentry into society, but she also helped those delivering burn care to better understand the bird’s eye view of burn recovery. The tools she developed have created a spiritual, psychological, and intellectual resource that offer patients an optimistic approach to community reentry.

In 2000, at the annual meeting of the American Burn Association, Barbara Kammerer Quayle was awarded the Curtis P. Arz, Distinguished Service Award, an award that is given to a nonphysician member of the American Burn Association. She has been active in the Phoenix Society for Burn Survivors (www.phoenixsociety.org), and with her occupational therapist, she established the Burn Support Group at The University of California Irvine Regional Burn Center, the first comprehensive hospital-based Image Enhancement and Behavioral Skills program in the United States. She has made it her life’s mission to devote herself to facilitating the reentry of burn survivors of all ages into the community.

**CONCLUSIONS**

The aesthetic considerations taken during burn reconstruction can have a profound impact on the quality of life our patients, but Barbara Kammerer Quayle developed the tools that only the patient can control for successful
reentry into the community. Burn reconstructive surgery helped this patient, and she not only helped many others, but she added to our understanding of burn survivor recovery.

PATIENT OF COURAGE VIDEO

Following a nomination from the senior author (D.W.F.), the patient received the 2017 Patient of Courage award at the annual meeting of the American Society of Plastic Surgeons held in Orlando, Fla. During the ceremony, a video of the patient illustrated the long road she traveled and how she rebounded (https://youtu.be/gPYdFXBcGn8; https://www.plasticsurgery.org/patients-of-courage/2017-patients-of-courage).

Requests for permission to use this video can be sent to the American Society of Plastic Surgeons.

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