CHAPTER 11

SPECIAL THERAPEUTIC MODALITIES: HYPNOSIS FOR ATTENUATION OF BURN DEPTH

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One of the most devastating physical and mental occupational stresses is a severe thermal burn of the face or extremity. Physical disfigurement and disability are often accompanied by deep feelings of resentment and unreasoning fear of returning to the same work environment.

The purpose of this paper is first, to review experimental work showing that in a standard thermal burn the depth and severity result not only from the heat applied, but also from the body's inflammatory reaction to the stimulus; and second, to show that in the burned patient early hypnosis can prevent the body's inflammatory reaction and thus attenuate the depth and severity of the burn.

Anyone who has had a significant sunburn knows that at the time of leaving the sun there may be redness and some discomfort, but it is only later the inflammation occurs, with the serious symptoms of burning pain, tenderness, swelling, fever, and blistering. Very little morbidity would ensue if the inflammatory reaction could be aborted and the process arrested at the time the stimulus is withdrawn. Augmenting Delboeuf's (1877) experiment, Chapman, Goodell and Wolff (1959 a) have done classic experiments demonstrating that the degree of inflammatory response and tissue damage to a standard burn can be augmented or diminished by hypnotic suggestion as well as by thermoregulatory reflexes induced by immersing the feet in hot or cold water.

But what of the patient whose burn is severe and deep, who has what we call a third degree or full-thickness burn? Can he be helped? Brauer and Spira (1966) have done a remarkable experiment showing that in a full-thickness burn, the destruction of all skin elements does not occur immediately. A standard and reproduceable full-thickness burn was applied to young pigs (whose skin most nearly resembles human skin in laboratory studies) and the burned area was excised and transferred as a free skin graft to a viable bed where the response of the body would be toward acceptance, such as occurs with any skin graft. Of 53 burn skin-to-normal beds there was an estimated 73% take, while 23 grafts of normal skin to the same burn beds had an 80% take, and 18 normal skin to normal beds had 98% take. They noted that "a delay of hours before removal of the burn graft materially influences graft survival in the new bed." This correlates with the evidence of Chapman et al., (1959 b) that the bradykinin-like substance associated with the inflammatory response is released within the first two hours of injury.

Entin and Baxter (1950), using human volunteers, plotted a graph showing

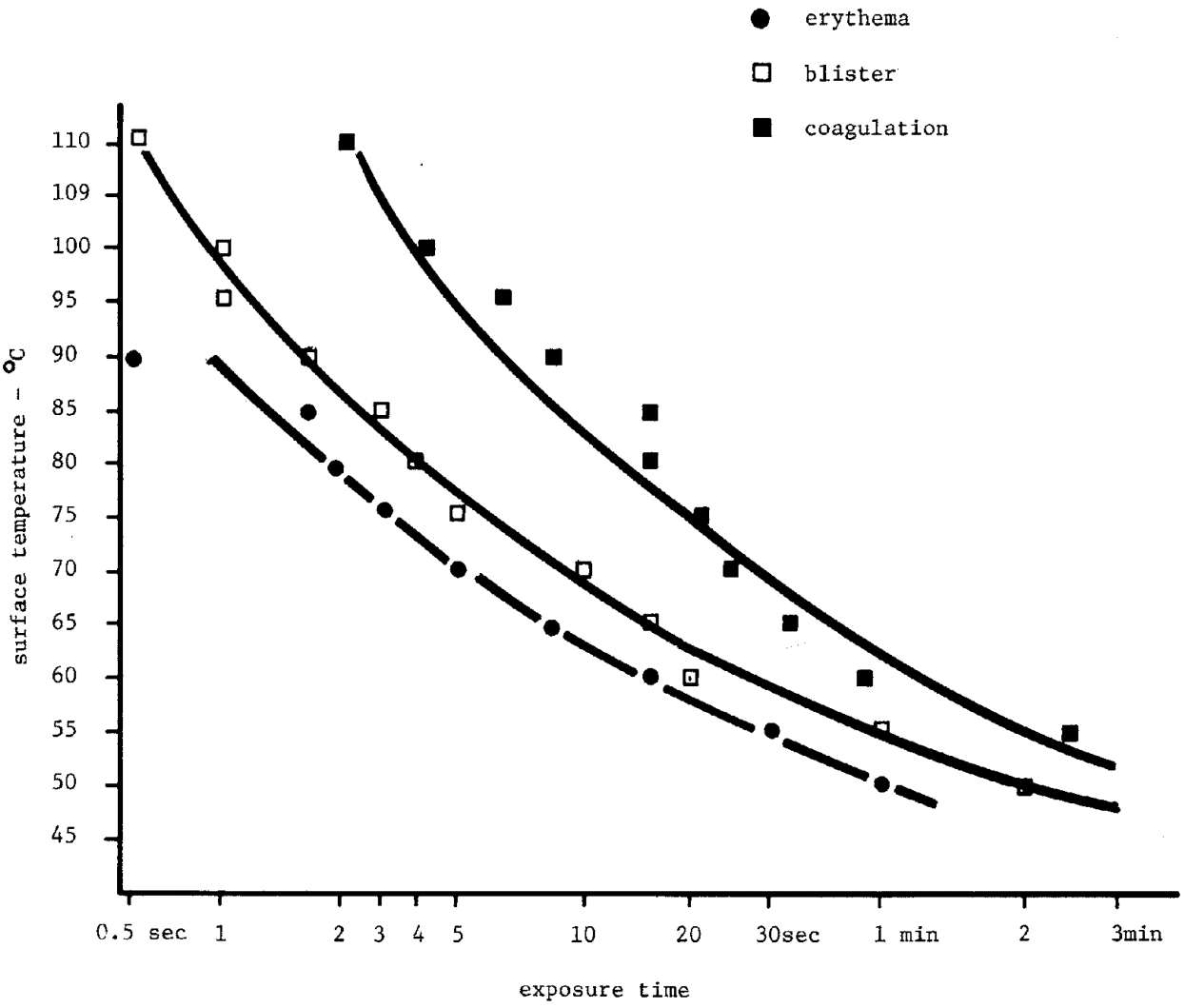


Figure 11.1 Surface temperature-time relation for different degrees of thermal injury to human skin. Entin and Baxter, 1950.

temperature-time relations for different degrees of thermal injury (Figure 11.1) at temperatures up to 110 degrees Centigrade. Coagulation of skin occurs with two seconds of exposure at 110 degrees Centigrade. No studies are available going as high as 950 degrees Centigrade.

The author has had experience with 12 significant burns of the face or extremities. One patient scoffed at the idea of hypnosis from the start, required skin grafts of his elbow and forearm, and had some permanent loss of motion of his fingers in spite of 6 months of physiotherapy. The others all healed rapidly without scarring and only one developed signs of infection on the eighth day. The most dramatic case is reported in detail.

CASE REPORT

R.G., 28 year old white male anode worker in an aluminum plant slipped and fell on August 22, 1974, with his right leg as far as the knee going down into molten aluminum at 950 degrees Centigrade (approximately 1750 degrees Farenheit). He was holding on to a stud and extricated himself quickly. First-aid attendants at the plant applied ice packs immediately and transported him in the plant ambulance directly to the emergency room where he was met by the author. The outer layers of skin were cooked brown and peeling, while the inner layers were blanched white with no apparent blood supply. He had very little pain, and pin-prick testing produced no blood and only an occasional response of sensation. Using the example of how a thought produces a blush and dilates all the blood vessels in the face, his attention was directed to the idea that what he thought about could affect the healing of his burn. He was receptive to learning how to do this and went easily into trance with a simple request that he close his eyes and focus his attention entirely on what I was saying. He had had 50 mg of meperidine (Demerol) and the ice packs were still in place. He was given suggestions that his right leg was cool and comfortable, and he readily acknowledged that this was how he felt and that it was a pleasant sensation. He was then given the suggestion that his mind would lock itself to this feeling so that his leg would continue to feel cool and comfortable day and night until it healed. He was asked to let his index finger rise to signal when he had a sense of certainty that he could accomplish this, and when he did it the trance was terminated.

Color photos were taken and the burns dressed with cyclomethycaine (Surfacaine) antibiotic. The following morning (21 hours post burn) his blood count showed 9300 white cells, with 70 segs, 25 lymphs, 5 monos. His temperature varied between 99 degrees and 100 degrees until his first dressing change on the sixth post-burn day when there was a single spike to 102 degrees. Photos were again taken. There was no clinical infection, no odor, almost no drainage on the dressing, and no edema of the foot in spite of the circumferential burn. He required one to three tablets of aspirin, phenacetin and caffeine, propoxyphene, (Darvon Compound 65) per day for relief, knowing that he could have meperidine if he requested it. On the 12th post-burn day the dressings were removed and he was started on daily whirlpool baths which were too vigorous for the delicate epithlium and caused some subepithelial hemorrhage. He was ambulatory and discharged from the hospital on the 19th post-burn day and returned to work on November 4, 1974, ten and a half weeks post-burn. The skin on the leg healed without scar tissue formation, with

regrowth of hair, and with some permanent bronzing of the skin still present 22 months later. The patient had returned to his same job and had been promoted to foreman.

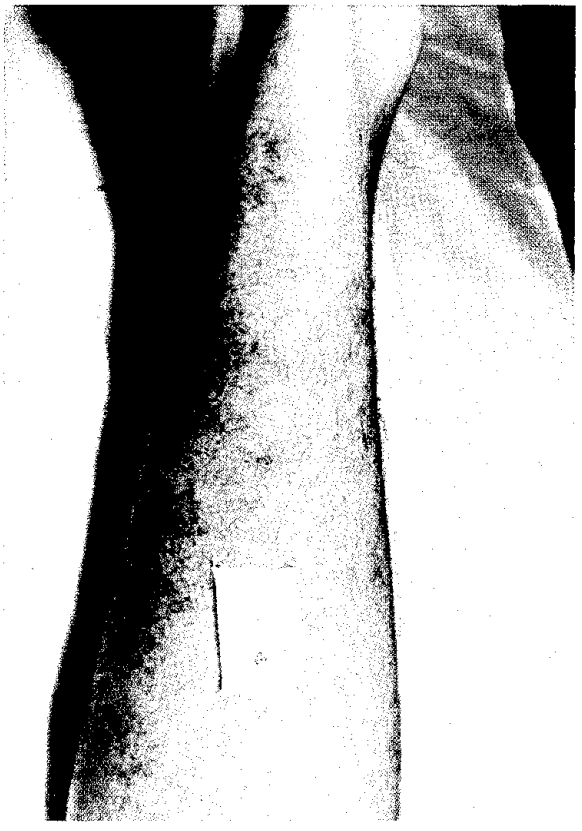
DISCUSSION

There are an estimated 2 million burns annually in the United States (Salisbury and Pruitt, 1976); it is possible that a great deal of morbidity could be alleviated by early hypnosis. Since both brain and skin have the same ectodermal origin in the embryo and the skin is the most highly innervated organ in the body, it is not surprising that the central nervous system exerts a profound control over physiological responses in the skin.

Reporting their experiences, Chapman et al.,(1959 b) conclude "that the subject's perceptions and attitudes may be relevant to neural activities that engender or enhance inflammatory reactions." There are multiple reports of hypnotic recollections of a previous burn (Ullman 1947, Bellis 1966, Johnson and Barber 1976) causing acute inflammation and/or blister formations at the site of the previous burn. This author has observed the same phenomenon on several occasions. Since every burned patient has had the experience of a burn, it is thus possible for his mind to maintain and enhance the inflammatory reaction by thinking about it. One of the most damaging emotions is guilt (Cheek 1962, Ewin 1973), and if present it must be removed before a patient will accept good suggestions of healing.

The patient should not only avoid harmful thoughts, he should develop a positive, optimistic attitude. Artz is quoted (Dahinterova 1967) that "the well motivated, secure individual did extremely well after even the most severe burn injury whereas individuals without these resources had considerable difficulty adjusting to the result of a massive injury." A number of clinical reports describe burn patients on a pitiful, hopeless, downhill course, who, after being hypnotized and encouraged to be optimistic, experienced a dramatic turn-around with rapid healing (Crasilneck et al 1955, Cheek 1962, Bernstein 1965, Dahinterova 1967, LaBaw 1973, Schafer 1975).

Infection will deepen a second degree burn to third degree, requiring a skin graft where primary healing might have occurred. The effect of hypnosis on infection is perplexing; the trance state might be viewed a analogous to the dormant state in trees, the cyst form on the amoeba, and the spore of the clostridium which are resistant to assaults which would easily overwhelm them in their active, vegative existence. Esdaille (1850) had a 50% mortality rate from surgical infection which dropped to 5% when he began using hypnotic anesthesia. Chong (1976) describes the Hindu fire-walkers of Singapore on Thaipusam Day going into somnambulistic trance, piercing thin steel shafts through their skin, silver pins through the tongue and cheeks, and walking on hot coals across a pit 20 by 30 feet. He says "curiously enough, with no aseptic preparation of the steel shafts and needles no case of sepsis or tetanus of the multiple puncture wounds has ever been reported. None of the fire-walkers suffer from pain or burns, though as they walk across their feet may sink into the hot cinders up to their ankles." Schafer (1975) notes that in the patients whom he hypnotized in the Burn Unit of Orange County Medical Center "There was no infection of any burns"; he then attributes this to good surgical care.



CASE REPORT - R.G.

It is apparent in reviewing the case reports in the literature that the hypnotist tends to be the last healer called in, and then only in desperation. I find only one patient treated early, namely, case 3 of Crasilneck et al., (1955).

> "A 32 year old non-white man was admitted to the hospital with a mixed superficial and deep dermal burn over 35% of the body surface. He was subjected to hypnosis after arriving at the hospital about four hours after the injury. No narcotics were required during the acute phase of injury or at any time during his 18 days of hospitalization. Complete alleviation of pain was obtained with hypnosis in this man throughout his hospital course."

I quote this case in its entirety because it describes the usual course of these patients in my experience as treating surgeon and hypnotist. An occasional patient will laugh at the whole idea and have a poor response, as some of Schafer's (1975) did. It should be noted that the work of Chapman et al (1959 a) showed that icing a burn holds the inflammatory process in check for several hours. Since icing is now standard emergency room care in the U.S., there would be ample time to call a qualified hypnotist if the primary physician is not skilled in the technique of hypnosis.

SUMMARY

1) In burns, there is no substitute for prevention, but having been burned, nothing could be more desirable than to limit the depth of the burn.

2) Experimental work shows that this can be done with early hypnosis, and clinically it has been my experience that these patients heal rapidly with increased resistance to infection, very little pain, and with an optimistic expectation of early return to normal activity.

3) It is emphasized that the suggestion "cool and comfortable", or suggestions of anesthesia are effective; the word "normal" is to be avoided because in experimental studies these subjects developed a "normal" burn.

4) A case is reported of a young man whose leg was immersed in molten aluminum at 950 degrees Centigrade; he was hypnotized within 30 minutes, developed only a second degree burn, and although antibiotics were not used, had no infection. He was discharged from the hospital on the nineteenth day and healed without scar tissue formation on the leg.

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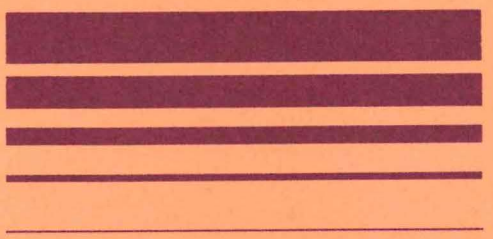

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