

From: "Pain Management in the Burn Patient"
 - Symposium at Vanderbilt University Burn Center, 1992
Rehabilitation Therapy



Kristi Dutcher, RPT

The pain experienced by burn patients during physical therapy is often as great as, or greater than, the pain experienced during wound care. Range of motion (ROM) exercises, positioning devices, splints, and pressure garments are necessary therapeutic interventions during the acute care and rehabilitation phases of burn therapy. Compliance with these treatments is important in preventing both cosmetic and functional impairment. The challenge to the burn therapist is to minimize the patient's pain while achieving treatment goals.

The most important step a burn therapist must take is to establish a relationship based on trust between himself or herself and the patient. In order to trust a therapist, the patient must first sense that the clinician is knowledgeable and competent. Therapists should be familiar with the rigorous demands of burn therapy and the crucial role that therapy plays in the patient's outcome. This understanding is necessary to educate, motivate, and support patients through a painful and unpleasant treatment course.

The patient must also feel that he or she has some control over therapy. After the treatment goals have been clearly outlined, the patient and therapist should work together to establish a mutually acceptable treatment plan. The patient must be allowed to express his or her concerns and to voice preferences. The therapist must be open-minded about

alternative ways to achieve the same end. When patients express anxiety about pain, they must be given an honest appraisal about what lies ahead, followed by reassurance from the therapist that all possible steps will be taken to lessen the pain.

The patient must feel that the therapist is his or her ally. The therapist should never be hurried, but should take the time to explain and to listen. Failure to do this will increase the patient's anxiety. Because physicians are often unavailable and the nursing staff rotates shift to shift, the burn therapist is often the team member who is seen most consistently by the patient. In the course of rehabilitation therapy, patients will often express other concerns, such as family or financial problems. As the patient's ally, the therapist should reassure him or her that an appropriate team member will be contacted to assist the patient in dealing with issues that are not related to therapy.

Acute care phase

Timing the therapy

Burn therapy in the acute care phase often involves performing painful stretching exercises on already painful, open wounds. The therapist can do several things to minimize this pain. One of the most effective techniques for minimizing pain, but one of the most difficult to implement, is to adjust the timing of the therapy.

"After the treatment goals have been clearly outlined, the patient and therapist should work together to establish a mutually acceptable treatment plan."

Performing stretching exercises early in the morning, before a patient has had his or her dressings changed, is often ineffective. Not only are the dressings usually attached to the wounds, creating more pain with movement, but the patient is often stiff from lying in splints or positioning devices all night.

Performing stretching exercises during the patient's wound care has advantages and disadvantages. The therapist has the advantage of being able to see the open areas and to adjust his or her hand holds accordingly. The therapist is also able to identify the areas of skin tightness and to modify his or her technique to create a more effective stretch. Moreover, the patient can move without being encumbered by adherent dressings.

Wound care is the time when the patient receives the greatest amount of pain medication. The patient may also have the advantages of being able to use nitrous oxide and to enjoy the therapeutic effects of water. On the other hand, wound care is often the time when a patient's pain is the most intense. It is also the time of many painful distractions, eg, three nurses working on different areas of the body, a patient screaming in the tub behind the next curtain, and multiple team members coming in to assess open wounds. When treatments are performed simultaneously or serially, the pain will increase in intensity.

Performing painful stretches after wound care also has advantages and disadvantages. Freshly applied creams and dressings may allow the patient to feel more comfortable and less restricted. Some patients may experience some residual pain relief from wound care medications, but others will receive inadequate pain relief for therapy procedures; additional procedural medications may be unavailable at close procedural intervals. Some patients also report that they require time between procedures to "regroup" emotionally.

Perhaps the optimal time for patients to perform painful stretching is during periods of anesthesia. Some burn centers use exams under anesthesia (EUA) for occasional vigorous debridement and

major dressing changes. While nurses and physicians are treating one area of the patient's body, the therapist can be performing gentle stretching on another area. Therapists can also take advantage of the periods when the patient is in the operating room for surgical procedures. Often a window of time exists between when the patient is intubated and when he or she is surgically prepped. This window of time can be used by the therapist to perform gentle ROM exercises without the resistance of muscle guarding.¹

Adjusting the treatment time is often a scheduling nightmare for the therapist because of his or her other patient responsibilities and because of the patient's ever-changing daily schedule. However, giving the patient some degree of control by negotiating the therapy time can help to better manage pain and increase patient cooperation.

Changing the therapy environment

Another technique for minimizing pain during the acute phase is to change the therapy environment by adjusting sounds, sights, and temperature. Patients will often express a personal preference for environmental conditions, and their wishes should be accommodated whenever possible. For example, background music can be used to relax or to distract. Some patients may require a dark, quiet room free of distraction. A busy gym with many patients working on equipment may provide the patient with greatly needed distraction and peer support, or it may have the reverse effect of too much sensory input and a loss of privacy. At all times, attempts should be made to minimize the sight or sounds of another patient in pain, as this will only increase a patient's own anxiety.

Adjusting the exercise strategy

The burn therapist can also decrease the patient's pain by adjusting the exercise strategy. In general, pain can be minimized when patients are allowed to take an active rather than a passive part in therapy. A patient will be more apt to stretch painful skin when the skin is well lubricated. The application of antibiotic creams, solutions, skin lotions, or paraffin

"Perhaps the optimal time for patients to perform painful stretching is during periods of anesthesia."

"...giving the patient some degree of control by negotiating the therapy time can help to better manage pain and increase patient cooperation."

"At all times, attempts should be made to minimize the sight or sounds of another patient in pain, as this will only increase a patient's own anxiety."

prior to stretching is helpful in reducing pain.²

Because the burn wound is shrinking 24 hours a day, many patients find that frequent, short exercise sessions are not only more productive but less painful. Some patients may be better able to deal with the pain when their therapy consists of a predetermined number of repetitions or a targeted ROM goal. Indirect stretching techniques involving the use therapeutic equipment, such as an arm ergometer or a stationary bicycle, may be less painful but still effective for some patients. The use of a continuous passive motion (CPM) device, with its predetermined ROM and speed limits, can be useful in decreasing a patient's anxiety, thereby reducing pain. The exercise strategy should be agreed upon by the patient and the therapist and should be designed to allow the patient the maximal degree of control without compromising treatment goals.

Using adjunctive therapies

The therapist can also use adjunctive therapies during treatment periods to minimize pain. The effective use of pharmacologic agents is critical. The physician is often unaware of the patient's analgesic and anxiolytic requirements for burn therapy. Although physical therapists are not directly involved in prescribing or administering medications, they are in a unique position to witness the patient's reactions to painful treatments and his or her responses to medications. The therapist should maintain a collaborative relationship with the physician to best determine adequate levels of pain medication. He or she should also work with the nursing staff to coordinate the delivery of pain medication with therapy schedules. Whenever possible, patients should be premedicated for rehabilitation therapy.

Distraction can be useful in managing brief procedural pain and in addressing anxiety behaviors. The effect of distraction is short-lived, however, and it is easier to perform in pediatric patients. Relaxation techniques can be used to enhance other therapies. The therapist can facilitate patient relaxation through touch, massage, rhythmic breathing,

music, and guided imagery.

Hypnosis has been shown to be a viable adjunctive treatment, providing generalized relaxation and direct blocking of pain during procedures. The analgesic effect of hypnosis allows greater exercise demands to be placed on the patient and promotes increased cooperation on the part of the patient.³

Rehabilitation phase

The problem of patient compliance

During the rehabilitation phase of therapy (a seemingly endless period of wound maturation), the burn therapist asks the patient to continue to comply with stretching exercises, splints, and pressure garments, but why should the patient cooperate? Pain continues for a burn patient long after the initial wound healing is complete. Nerve endings are regenerating, and the patient's skin is contracting at a more rapid rate. The physical therapist should never expect that the pain will continually decrease. The quantity and quality of pain changes hourly until the wound is mature. Unless patients leave the hospital with an understanding of what to expect during their recovery and of how to manage their pain, they will likely become noncompliant with therapy.

Education is the key element in achieving long-term patient compliance. Patients must understand what is causing their continued discomfort and skin changes. They should be reminded of the techniques used in the hospital to manage pain, ie, moisturizers, hydrotherapy, the timing of therapy, and relaxation techniques. The therapist should also give the patient a list of techniques, including the use of pain medications, to try when the pain becomes severe. Although physicians are often reluctant to prescribe outpatient opioids, they may be more willing to prescribe nonsteroidal medications.

Whenever possible, the burn therapist should maintain contact with the patient during the rehabilitation phase through outpatient or clinic visits. The patient will be more apt to comply with a painful regimen of therapy if he or she

"The therapist should maintain a collaborative relationship with the physician to best determine adequate levels of pain medication."

feels that the therapist continues to act as a partner and as an advocate for the patient's needs throughout the rehabilitation phase. The therapist can monitor the patient's progress and advocate changes in outpatient treatment if progress appears to be slow or absent because of pain. It may be necessary to arrange outpatient therapy for a patient if he or she is unable to achieve full ROM independently. Changes in medication may also be indicated. Patients can be encouraged to attend burn support groups to interact with others who may have learned helpful strategies for coping with pain.

Summary

Rehabilitation therapy is crucial in achieving an optimal cosmetic and functional outcome in burn patients. The techniques used in burn therapy are often painful. The therapist can help the patient manage his or her pain by establishing a relationship based on trust, by giving the patient some degree of control during treatment, by providing him or her with multiple

treatment options, by facilitating the patient's understanding of his or her injury and rehabilitation needs, and by acting as an advocate for the patient's concerns with the rest of the burn team.

Each patient is unique. The therapist's approach must be flexible to meet the often changing needs of each patient.

References

1. Nicosia J, Stein ED, Stein JM. The advantages of physiotherapy for burn patients under anesthesia. *Burns*. 1978;6:202-204.
2. Nothdurft D, Smith PS, LeMaster JE. Exercise and treatment modalities. In Fisher SV, Helm PA (eds). *Comprehensive Rehabilitation of Burns*. Baltimore: Williams & Wilkins, 1984.
3. Mendelsohn IE. Pain and psychological stress management. In Di Gregorio VR (ed). *Rehabilitation of the Burn Patient*. New York: Churchill Livingstone, 1984.

"The patient will be more apt to comply with a painful regimen of therapy if he or she feels that the therapist continues to act as a partner and as an advocate for the patient's needs throughout the rehabilitation phase."
