

Review and Management of Peripheral Sprains

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For the purpose of this writing, a sprain is defined as a violent twisting of a joint with partial rupture (or other injury) of its attachments, without the luxation of bones or formation of a hematoma. For therapeutic purposes, it is also presupposed that this injury receives treatment within a few hours following occurrence. Also, this writing will offer two approaches to treatment.

Initially, the sprained area should be examined to ensure the absence of related vascular damage, particularly the absence of a hematoma. If such a lesion is recognized, and a reduction in palpable arterial pulses distal to the lesion are found, it is recommended that a vascular surgical consult be obtained to rule out the presence of a thrombus. In the absence of such a lesion, this author recommends one of two approaches be taken in treating this lesion.

RICE therapy may be initiated: the sprained area is rested; cryotherapy in the form of an ice pack or frozen silicone gel wrap is applied; the area is then wrapped with a compress bandage; and the sprain is elevated above heart level to encourage reduction in the traumatic edema by means of gravity drainage. Cryotherapy is continued until the threat of hemorrhage is absent. Elevation of the part is, of course, dependent upon the anatomical location of the part. If the joint was found to be orthopedically stable relative to its integrity and without evidence of need for surgical stabilization of the ligamentous components of the joint, the patient may cautiously be allowed to be ambulatory using crutches, if possible. Cautious and limited mobility of the joint will enhance repair with areolar tissue, rather than collagenous tissue, which is desired.

Another approach, preferred by this author, is contrast therapy. In the absence of vascular damage and thrombus, the sprain is treated with moist cryotherapy by means of an ice pack, or frozen silicone gel wrap, or a vessel containing ice water, depending upon the appropriate therapy for the anatomical part being treated. Following cryotherapy, the part is transferred directly to moist heat. This may be in the form of a moist heat wrap, a heated silicone gel wrap, or a vessel of warm water and is held in this manner for 5-8 minutes. After this, the part is once again transferred to moist cryotherapy for 10-15 minutes, again ensuring the absence of cyanosis. This cycle may be repeated as often as the patient is considered to receive therapeutic benefit from it in the opinion of the treating physician. Commonly, two to three cycles are sufficient during one treatment period. Of course, following the contrast therapy, the part must be wrapped with a compress and then elevated during rest, as was the case with cryotherapy alone.

This may be an exhausting procedure for the patient, but contrast therapy makes use of the physiological principles involved in the vasomotor changes occurring under the influence of the thermoregulatory center in the midbrain. It is this author's opinion that such lesions treated with contrast therapy heal more readily and with less residual pathology.

The physician is reminded that cryotherapeutic and thermotherapeutic agents must be applied with caution, if at all, to the very young and the very old. The very young may not have a sufficiently mature thermoregulatory system which would allow them to compensate physiologically for such temperature swings. The elderly may have a similar problem due to degenerative neurological changes common to aging. Both age groups are more susceptible to erythema ab igne as well.

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