Dynamic Chiropractic

Vitamin C, Reflex Sympathetic Dystrophy and Complex Regional Pain Syndrome

G. Douglas Andersen, DC, DACBSP, CCN

When I was in school, I remember being told that *reflex sympathetic dystrophy* (RSD) was the modern term for causalgia, a condition first described by doctors during the Civil War. After graduation, I recall attending a seminar and learning that *causalgia* was the correct term to use if RSD was severe. Because of the confusion surrounding these two terms (as well as others), the condition was re-named in the mid 1990s to *complex regional pain syndrome* (CRPS), with CRPS Type 1 replacing RSD and CRPS Type 2 replacing causalgia. The differences were that the nerve dysfunction in CRPS Type 1 patients stemmed from traumas like sprains, fractures and surgeries, in which there was no direct nerve damage. The CRPS Type 2 label was reserved for those with a direct nerve injury. (However, due to the fact that the symptoms of the two classes do not differ, many doctors and therapists continue to call the condition RSD.)

Characteristics of CRPS

Table 1: Skin Changes in the Area of CRPS*

Thinning
Shiny appearance
Swelling
Sweatiness or moistness
Redness, white color, blue color
Increased temperature or decreased temperature
Increased hair growth or hair loss
**Not all changes are seen in all patients.*

CRPS is most likely to occur following trauma to an extremity that requires immobilization, such as a fracture, surgery or gunshot wound. However, it can even occur after a minor sprain or even a blood draw. The hallmark symptoms are intense burning pain and extreme skin sensitivity. A host of skin changes can also occur. (Table 1) Joint stiffness, muscle contractions, weakness and muscle atrophy can occur after three or more months.

Vitamin C for CRPS: What Recent Research Suggests

The authors of a 2009 study[1] called it a "quasi experiment" because it compared the outcomes of 392 patients in successive years who had foot and ankle surgeries. The first group (July 2002 - June 2003) numbered 177 patients; the second group (July 2003 - June 2004) included 215 patients. Patients in the second group only were given 1,000 mg of vitamin C a day for 46 consecutive days following their surgery. Study findings are shown in Table 2.

Table 2: Post-Op Vitamin C and CRPS Incidence		
	No Vitamin C	Vitamin C
Number of Patients	177	215
CRPS Cases	18	4
% CRPS Cases	9.6%	1.7%

The results of this "quasi experiment" mirror an earlier study in 2007[2] involving wrist fractures, in which there was a 10 percent rate of CRPS in patients given placebo, a 1.8 percent rate of CRPS in patients given 500 mg of vitamin C and a 1.7 percent incidence of CRPS in a third group given 1,500 mg vitamin C for 50 days after their wrist injuries.

Practice Recommendations

Based on these two studies, the simple addition of 500 mg of vitamin C a day for two months following extremity trauma appears to reduce of the incidence of CRPS by 80 percent. Whether you practice nutrition or not, anytime you have a patient who has a upper or lower limb injury requiring casting or surgical repair, remind them to take some extra vitamin C. Not only will it help healing by its well-recognized effect on collagen formation and free-radical reduction, but it also just may prevent CRPS. And as anyone who has had a CRPS patient will tell you, the best treatment is prevention.

References

1. Besse JL, Gadeyne S, Galand-Desme S, et al. Effect of vitamin C on prevention of complex regional pain syndrome type 1 in foot and ankle surgery. *Foot and Ankle Surgery*, 2009;(15)179-182.
2. Zollinger TE, Tuinebreijer WE, Breederveld RS, et al. Can vitamin C prevent complex regional pain syndrome in patients with wrist fractures? A randomized controlled multicenter dose-response study. *J Bone Joint Surg* (U.S.), 2007;(89):1424-1431.

APRIL 2010