

PAIN AFTER SURGERY IS THE PRIMARY CONCERN of most patients. For those who have ongoing or previous history of complex regional pain syndrome (CRPS), the risk of worsening or recurrent CRPS is not only daunting, but real. As many as 20% of all new cases of CRPS are believed to have been caused

preoperative pain greater than one month, intense postoperative pain, and a surgical procedure that pose a risk of nerve damage. These factors should be mitigated or modified, where possible, to decrease the risk of recurrence.<sup>6</sup>

In summary, there is no way to diagnose CRPS recurrence in the early postoperative days. There are pointers, however, such as pain intensity that is out of proportion to that expected for the surgery, increased sensitivity and intolerance to light touch, temperature changes in the affected skin or beyond,

# Can a patient with complex regional pain syndrome distinguish recurrence from acute postoperative pain?

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by surgical procedures,<sup>1-3</sup> and the vast majority of these surgeries are orthopedic.<sup>1</sup>

In the postoperative setting, it may be difficult, and some would argue impossible, to distinguish recurrence of CRPS from postoperative pain.<sup>4</sup> The pain associated with CRPS is not uniform, but can range from dull aches to intense sharp, shooting and burning. Some other symptoms, for example, swelling of the affected limb, are not exclusive to CRPS, but also can be caused by other surgical complications, such as deep venous thrombosis or vascular insufficiency. The only sign that is more suggestive of CRPS presence may be malfunction of the sympathetic system, as indicated by increased sympathetic vasoconstrictor reflexes and excessive sweating.<sup>5</sup> Even these signs can be caused by other conditions, such as anxiety or heart failure.

Several factors have been identified which place a patient at increased risk for CRPS recurrence. They include

Although no one can determine when to schedule surgery for the lowest risk for CRPS recurrence, most authorities recommend delaying surgery until the CRPS symptoms resolve. Some even recommend a waiting period of five months to one year beyond the resolution of the CRPS symptoms. Several anesthetic techniques may also be helpful in reducing not only acute postoperative pain, but also the recurrence of CRPS.<sup>1</sup> Regional nerve blocks that provide adequate suppression of sympathetic tones as well as certain intravenous medications, like lidocaine and clonidine, have been shown to decrease the incidence of postoperative CRPS.<sup>1,2</sup> In one study, the prophylactic use of a stellate ganglion block in patients with a history of CRPS decreased the incidence of CRPS recurrence from 72% to 10% following reoperation in the affected upper extremity.<sup>2</sup> Physical therapy and rehabilitation are also vital to reducing the intensity of CRPS.<sup>1,7</sup>

lack of response to the usual pain medications etc. In another words, those symptoms and signs that led to the initial diagnosis of CRPS should alert one to suspect a recurrence.

## References

1. Gottschalk A, Raja SN. Severing the Link between Acute and Chronic Pain: The Anesthesiologist's Role in Preventative Medicine. *Anesthesiology*. 2004;101:1063-1065. Editorial.
2. Raja SN, Grabow TS. Complex Regional Pain Syndrome I (Reflex Sympathetic Dystrophy). *Anesthesiology*. 2002;96:1254-1260.
3. Veldman P, Goris R. Multiple reflex sympathetic dystrophy. Which patients are at risk for developing a recurrence of reflex sympathetic dystrophy in the same or another limb. *Pain*. 1996;64(3):463-466.

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important to Andrea. She wanted to go to school since she was 5 years old.

There were many nights I slept in the dorm room with her because she was in so much pain and didn't want to be alone. But she was so determined. She never gave up."

Both awards will be given in January 2010. Award applications have been slowly trickling into the organization, but both Leslie and Gus hope that with greater awareness, more people with CRPS can benefit from the funds. "The more people that know about Fighting "4" Us, the more that we can help them," declares Gus.

It's easy to see where Andrea got her dedication and persistence, although her parents would say otherwise. "People have said to me 'you've done everything for Andrea and helped her get through.' I've always said that Andrea got us through. It was her determination. There were times when her CRPS was so bad and she wanted to give up and she could barely stand it. But her overall attitude and her overall behavior was to just keep on fighting," explains Leslie.

Just as Gus and Leslie are raising interest in Fighting "4" Us, their daughter was also intent on rallying others to the cause and increasing the membership as she notes in the organization's mission, "Now the one thing missing from this organization is you. You are the reason we began this organization, and you are the reason why we will keep it going...I truly believe this dream will come true, and with your help it will, and we will beat this disease known as RSD." Powerful words and extraordinary vision from a leader gone too soon.

*Further information and applications for both awards can be found on the website, [www.fighting4us.com](http://www.fighting4us.com); the submission deadline is December 1, 2009. ■*

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4. Birklein F, Kunzer W, Sieweke N. Despite clinical similarities there are significant differences between acute limb trauma and complex regional pain syndrome I (CRPS I). *Pain*. 2001;93(2):165-171.
5. Revision total knee arthroplasty. In: Bono JV, Scott RD. Eds. *Techniques in Total Knee Arthroplasty*. New York, NY: Springer Science + Business Media, Inc; 2005:33.

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- syndromes and definition of pain terms*. 2nd Ed. Seattle, WA: International Association for the Study of Pain Press; 1994.
2. Wilder RT. Management of pediatric patients with complex regional pain syndrome. *Clin J Pain*. 2006;22:443-448.
  3. Lebel A, Becerra L, Wallin D, et al. fMRI reveals distinct CNS processing during symptomatic and recovered complex regional pain syndrome in children. *Brain*. 2008;131:1854-1879.
  4. Bruininks RH, Bruininks BD. Bruininks-Oseretsky Test of Motor Proficiency (BOT-2). 2nd Edition. Pearson Assessments; 2006.
  5. Binkley JM, Stratford PW, Lott SA, Riddle DL. The Lower Extremity Functional Scale (LEFS): scale development, measurement properties, and clinical application. North American Orthopaedic Rehabilitation Research Network. *Phys Ther*. 1999;79:371-383.
  6. Stratford P, Binkley J, Watson J, Health-Jones T. Validation of the LEFS on patients with total joint arthroplasty. *Physiotherapy Canada*. 2000;52:97-105.
  7. Carpenter L, Baker GA, Tyldesley B. The use of the Canadian Occupational Performance Measure as an outcome of a pain management program. *Can J Occup Ther*. 2001;68:16-22.
  8. Law M, Baptiste S, Carswell-Opzommer A, McColl M, Polatajko H, Pollock N. Canadian Occupational Performance Measure. 3rd ed. Ottawa (ON): CAOT Publications; 1998.
  9. Claar RL, Walker LS. Functional assessment of pediatric pain patients: psychometric properties of the functional disability inventory. *Pain*. 2006;121:77-84.
  10. Kovacs M. The Children's Depression Inventory (CDI). *Psychopharmacol Bull*. 1985;21:995-8.
  11. March JS, Parker JD, Sullivan K, Stallings P, Conners CK. The Multidimensional Anxiety Scale for Children (MASC): factor structure, reliability, and validity. *J Am Acad Child Adolesc Psychiatry*. 1997;36:554-565. ■