Incidence of Recurrent Complex Regional Pain Syndrome in Patients Incurring Subsequent Extremity Surgery or Trauma
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Background
Complex regional pain syndrome (CRPS) is a rare but particularly challenging condition which encompasses pain involving a spectrum of neuromuscular, vasomotor and sudomotor symptoms associated with nerve injury from acute trauma or chronic compression. To the upper extremity surgeon, CRPS can present as the result of an injury or compression for which surgical intervention is sought, or it can occur as a complication of a mundane surgical procedure. Understanding the signs and symptoms of CRPS requires knowledge of the diagnostic criteria, including the classification of CRPS Types I and II.

Objectives
- Identify patients seen in clinic with a diagnosis of CRPS.
- Determine if those patients were exposed to a documented inciting event such as trauma or surgery in an unaffected extremity.
- Establish whether identified patients subsequently developed CRPS in a previously unaffected extremity either in the presence or absence of a documented inciting event.

Methods
An Institutional Review Board-approved, retrospective chart review was conducted for patients presenting to the Wake Forest Baptist Medical Center Department of Orthopaedic Surgery clinic with CRPS over a two-month period (September 2012 and June 2014), as identified by using CPT codes for complex regional pain syndrome (652.2, 365.71), algodystrophy (753.7) and reflex sympathetic dystrophy (337.20, 337.21, 337.22). Clinical documentation for each of 130 identified patients was reviewed to determine if the International Association for the Study of Pain (IASP) criteria for a diagnosis of CRPS Type I or II were met. Those with symptoms or exam findings not fitting a diagnosis of CRPS were excluded.

Results
The review identified 93 individuals with an appropriate diagnosis of CRPS with patient ages ranging from 8 to 72 years. No evidence of edema, blood flow abnormality or abnormal function in the upper extremity was noted, with nearly three-quarters of cases occurring in women. Type I CRPS was also much more common than Type II, occurring in 94.6% and 5.4% of cases respectively. The majority of these patients (93.6%) had an identifiable traumatic and/or surgical insult prior to developing symptoms, but in a few patients, the underlying cause could not be recollected or identified in the record. Cases were relatively evenly distributed between the upper and lower extremities with 62.7% and 47.3%, respectively. Among the 32 patients with upper extremity CRPS, for which hand dominance was documented in the medical record, 24 (75%) developed the syndrome in their dominant hand.

Based on review of the electronic records available for clinical encounters at our institution for these 93 patients, 20 (21.5%) developed symptoms following an identifiable inciting event in each extremity. Average follow-up was 52.2 months.

Conclusions
Among patients in this study with a history of CRPS, 20.4% went on to develop recurrent CRPS in another extremity compared to an incidence of 0.02% in the general population and 1-5% among those with common potential inciting events such as DFR or CTR. Furthermore, of the 20 patients with a documented secondary inciting event, 75% went on to develop CRPS in that extremity.

References