Complex Regional Pain Syndrome: A Case Demonstrating the Need for Early Detection Across Specialties to Improve Timely Pain Medicine Intervention

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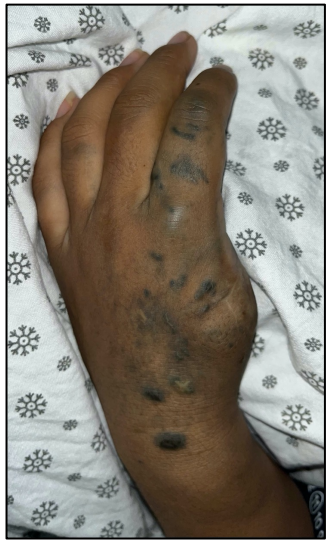
Introduction

- Complex regional pain syndrome (CRPS) is a chronic pain disorder with a prevalence of 5.4 to 26.2 per 100,000 persons per year, affecting females up to four times more likely.
- CRPS is characterized by chronic pain disproportionate to the degree of injury beyond the usual expected time of healing, including sensory, motor, and autonomic changes such as allodynia, vasomotor abnormalities, and trophic changes of the skin.
- CRPS commonly develops after a trauma, fracture, or surgery.

Case Description

- 33 year-old woman with history of left thumb amputation who presented to the emergency department (ED) for three days of severe left shoulder pain with radiation to the left hand, unable to move arm due to pain. Patient weighed 47.0 kg and worked as a fast-food chef. The pain was described as a tearing and pressure-like sensation inside the arm. No recent trauma. Prior pain medication use included acetaminophen which did not provide relief, no current medications or prior recreational drug use.
- Physical examination showed the left hand as edematous, indurated, hyperpigmented, and warm to touch. Passive range of motion of the left upper extremity was limited by the patient being guarded with severe allodynia.
- Physical medicine and rehabilitation was consulted and recommended outpatient bone scan, physical therapy (PT) and occupational therapy (OT), pregabalin and duloxetine, and consulting pain management service for formal evaluation of CRPS. The patient was given methocarbamol, ketorolac, acetaminophen, and lidocaine patch, and discharged one day later with only mild improvement in pain. On three-month follow-up, patient remained with 8/10 pain to the left arm and had not been evaluated by pain medicine. Outpatient bone scan was ordered to aid in CRPS confirmation, now pending.
- Anticipated treatment includes PT and OT, pharmacotherapy (pregabalin, duloxetine, ibuprofen, potentially ketamine), behavioral therapy, and potential procedural interventions (stellate ganglion block).



Left hand on examination

Budapest Criteria (American College of Emergency Physicians)

1. Continuing pain that is disproportionate to any inciting event.
2. Must report at least one symptom in three of the four categories: a. **Sensory:** hyperesthesia and/or allodynia b. **Vasomotor:** temperature asymmetry and/or skin color changes and/or skin color asymmetry c. **Sudomotor/edema:** reports of edema or sweating changes and/or sweating asymmetry d. **Motor/trophic:** decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)
3. Must display at least one sign in two or more of the following categories: a. **Sensory:** hyperalgesia to pinprick, allodynia to light touch and/or deep somatic pressure and/or joint movement b. **Vasomotor:** evidence of temperature asymmetry and/or skin color changes and/or asymmetry c. **Sudomotor/edema:** evidence of edema and/or sweating changes an/or sweating asymmetry d. **Motor/trophic:** evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)
4. No other diagnosis that better explains the signs and symptoms.

Discussion

- This patient meets the Budapest criteria for diagnosing CRPS, however she did not receive the proper aggressive management to not only improve pain, but restore function.
- Prior studies have shown the mean duration of CRPS symptoms prior to pain center evaluation is 30 months.
- Without the specific interprofessional approach to CRPS - physical and occupational therapy, pharmacotherapy, behavioral therapy, and potential procedural interventions - patients can develop significant muscle atrophy, contractures, and ultimately disability.

Conclusion

- We present the case of a woman with likely CRPS based on Budapest criteria who was evaluated in the ED but ultimately not referred to pain medicine specialists.
- It remains critically important to provide CRPS awareness and education to physicians across all specialties in order for patients to receive tailored management to ultimately reduce pain-related disability and restore function.

References

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Acknowledgements

- No sources of external funding.