

# Challenges in Perioperative Management of Patients at Risk for Progression of Complex Regional Pain Syndrome: A Case Study

## INTRO

- Complex regional pain syndrome (CRPS) is a chronic pain condition defined by hyperalgesia, allodynia, autonomic abnormalities, and trophic changes.
- While often restricted to the limb in which an inciting trauma occurred, there have been reports of CRPS extending to multiple extremities or the entire body.
- Here, we discuss challenges with ongoing pain management in the perioperative period for a patient diagnosed with full-body CRPS undergoing total shoulder arthroplasty.

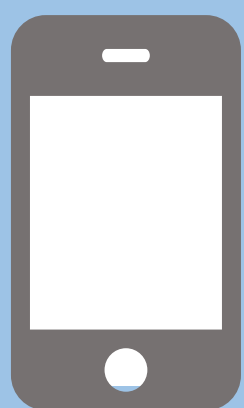
## METHODS

- A literature search was conducted on perioperative pain management in patients with CRPS.
- A retrospective chart review was completed on 1 patient case after patient consented.

## CASE

- 45-year-old female with CRPS type 1 in her right leg that began after a tibial osteotomy and progressed to chronic generalized body pains (throbbing, stabbing, burning), whooshing in ears, and insomnia.
- Her pain regimen included Butrans 20 mcg/hr patches weekly, oxycodone 15 mg QID, ketamine troches 300 BID and nasal spray 150mg/mL 20 times/day, duloxetine BID, 500 mg THC daily, and cyclobenzaprine prn.
- A multimodal pain plan was implemented including a preoperative superior trunk catheter along with a post-operative ketamine infusion and oral/IV opioids as needed.
- There were no noted complications intra-op and post-operatively. The patient did not report any flares of her CRPS before discharge on POD 7.
- She resumed her home pain regimen and upon surgical follow-up denied any exacerbation of CRPS symptoms.

A single case study detailing **peri-operative pain management of a patient with reported full-body CRPS** during shoulder surgery.



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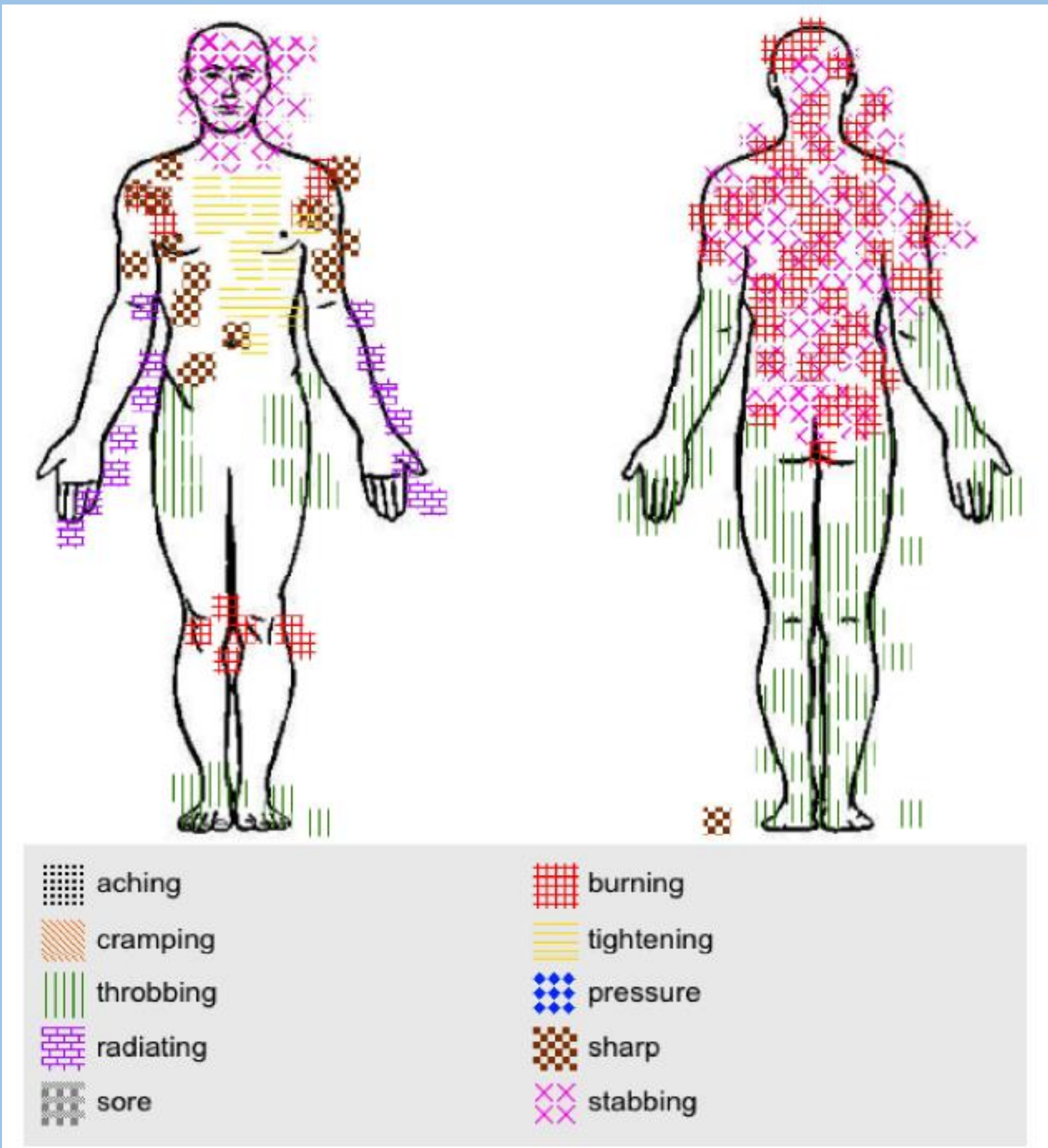


**Figure 1**  
Self-reported pain body map pre-evaluation

## DISCUSSION

- The underlying mechanism of CRPS remains unclear, though current understanding implicates neuronal plasticity deficits, dysregulated sympathetic and central nervous systems, aberrant inflammatory responses, and genetic predispositions.
- This case explores the distinct presentation and management of a patient diagnosed with full-body CRPS. Despite its debilitating nature, there is a lack of literature detailing clinical features, impacts, and management challenges for full-body CRPS.
- Comprehensive treatment strategies that emphasize early recognition and multidisciplinary management to optimize functional restoration are essential due to the intricate interplay of neurological, inflammatory, and psychological factors affecting the full body.
- In the management of CRPS affecting a single limb, nerve blocks and ketamine infusions have been employed during acute flares. This case underscores how tailored multimodal treatments in the perioperative phase can potentially mitigate the recurrence or exacerbation of symptoms in full-body CRPS.

