



Clenched Fist Syndrome Disguised as CRPS Type I

Katherine Ly, OMS II¹; Neyha Cherin, D.O.² Natasha L. Romanoski, D.O.²

Western University of Health Sciences¹, Penn State Health, Department of Physical Medicine and Rehabilitation²

Click on each section to open up a link for more details

Introduction

Complex regional pain syndrome (CRPS) is characterized by disproportionate pain, sensory, motor, and vasomotor deficits affecting an extremity following trauma.

In CRPS type I, patients experience a regional pain that is not specific to a nerve or dermatome and is inconsistent in its degree of severity and progression following an injury.

Case Description

A 52 yo male sustained a traumatic injury to his R hand. XR revealed diffuse soft tissue swelling and was negative for fracture. He begins to develop R hand stiffness and inability to open the hand resulting in a clenched fist position. He is evaluated by physiatry and is diagnosed with CRPS I as per Budapest criteria [Table 1] and triple phase bone scan [Fig. 1].

Treatments begin including stellate ganglion block, botox, and phenol neurolysis with continued presentation of clenched fist. Constant re-evaluation for symptom etiology, treatment options, and goal-setting remain in consideration

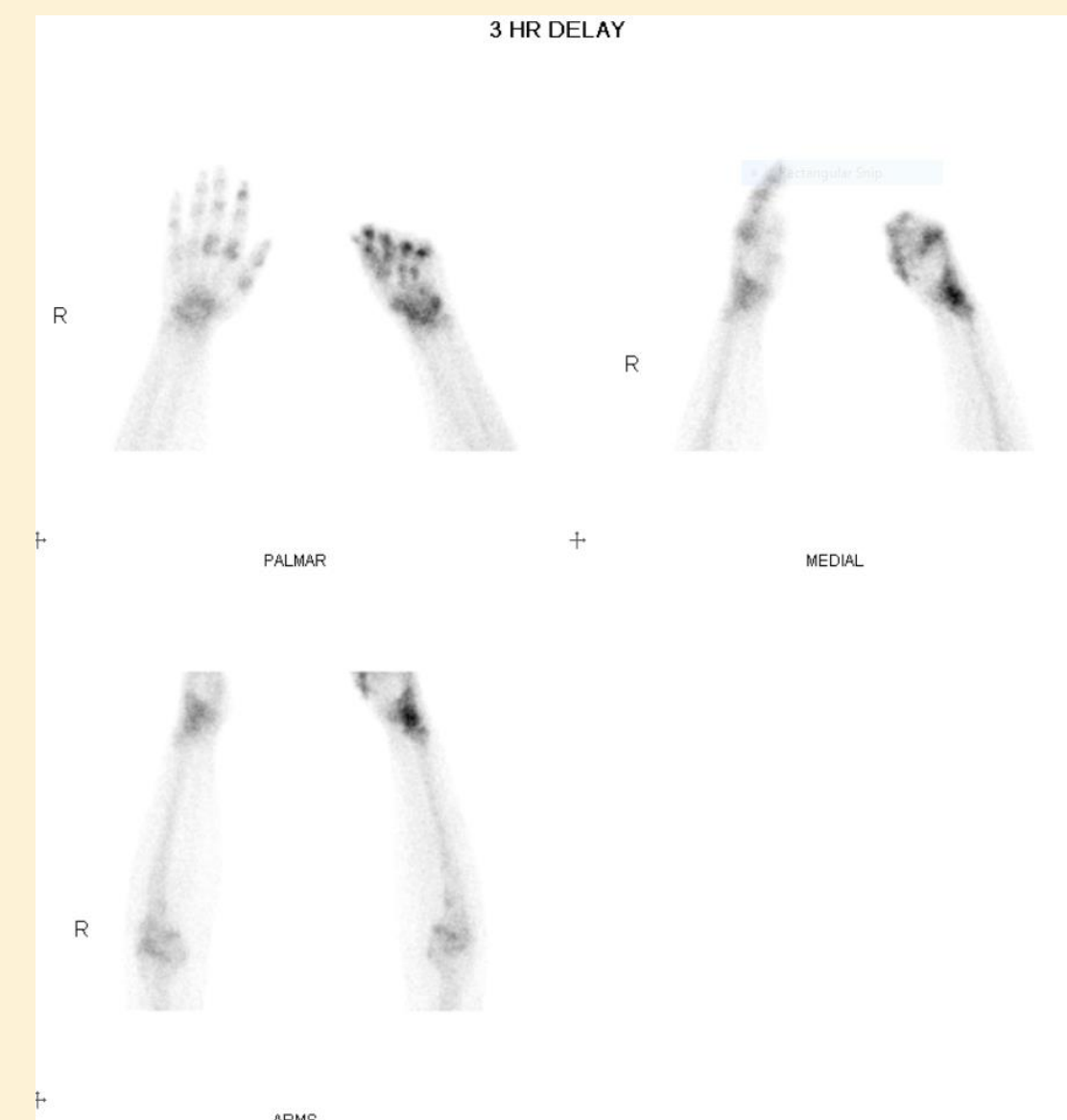


Figure 1. Delayed phase bone scan depicting increased periarticular uptake in the right hand.

Clinical Diagnostic Criteria (Budapest Criteria) for Complex Regional Pain Syndrome			
A - D must apply for a confirmed diagnosis of CRPS			Y/N
A	Continuing pain, which is disproportionate to any inciting event.		<input checked="" type="checkbox"/>
B	The Patient must report at least one <i>symptom</i> in three of the four following categories:		
	Categories	Description	Y/N
	Sensory	Reports of hyperesthesia and/or allodynia	<input checked="" type="checkbox"/>
	Vasomotor	Reports of temperature asymmetry and/or skin colour changes and/or skin colour asymmetry	<input checked="" type="checkbox"/>
	Sudomotor/Oedema	Reports of oedema and/or sweating changes and/or sweating asymmetry	<input checked="" type="checkbox"/>
	Motor/Trophic	Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)	<input checked="" type="checkbox"/>
C	The clinician must observe at least one <i>sign</i> * at the time of the evaluation in two or more of the following categories:		
	Categories	Description	Y/N
	Sensory	Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement)	<input checked="" type="checkbox"/>
	Vasomotor	Evidence of temperature asymmetry and/or skin colour changes and/or skin colour asymmetry	<input checked="" type="checkbox"/>
	Sudomotor/Oedema	Evidence of oedema and/or sweating changes and/or sweating asymmetry	<input checked="" type="checkbox"/>
	Motor/Trophic	Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)	<input checked="" type="checkbox"/>
D	There is no other diagnosis that better explains the signs and symptoms.		<input checked="" type="checkbox"/>
* A sign is counted only if it is observed at time of diagnosis			
For research diagnostic criteria the patient must report at least one symptom in each of the 4 categories in part B			

Table 1. Harden R. et al., Complex Regional Pain Syndrome: Practical diagnostic and Treatment guidelines, 4th edition, Pain Medicine 2013; 14:180 – 229

[Click for References](#)

Discussion

The primary mechanism of CRPS pathogenesis remains in debate. Proposed factors include dysfunctional sympathetic activity, inflammation, central sensitization, and cortical reorganization.

Among the studied and emerging treatment options are sympathetic nerve blocks, bisphosphonates, spinal cord stimulation, pulsed radiofrequency neurolysis, botulinum chemodenervation, and ketamine infusion.

Given continued presentation of closed hand, clenched fist syndrome (CFS), a variant of conversion disorder, should also be considered. Re-assessment of symptoms and performing a psychiatric consultation may aid in determining whether psychological factors play a role.

Conclusion

Treatment continues for the patient's symptoms while also addressing psychological considerations. Treatment goals, however, remain the same: to restore function, decrease pain, and improve quality of life.



PennState Health
Milton S. Hershey Medical Center

