

Case report on Continuous Passive Motion therapy on hand burns in a patient with a large total body surface area burn



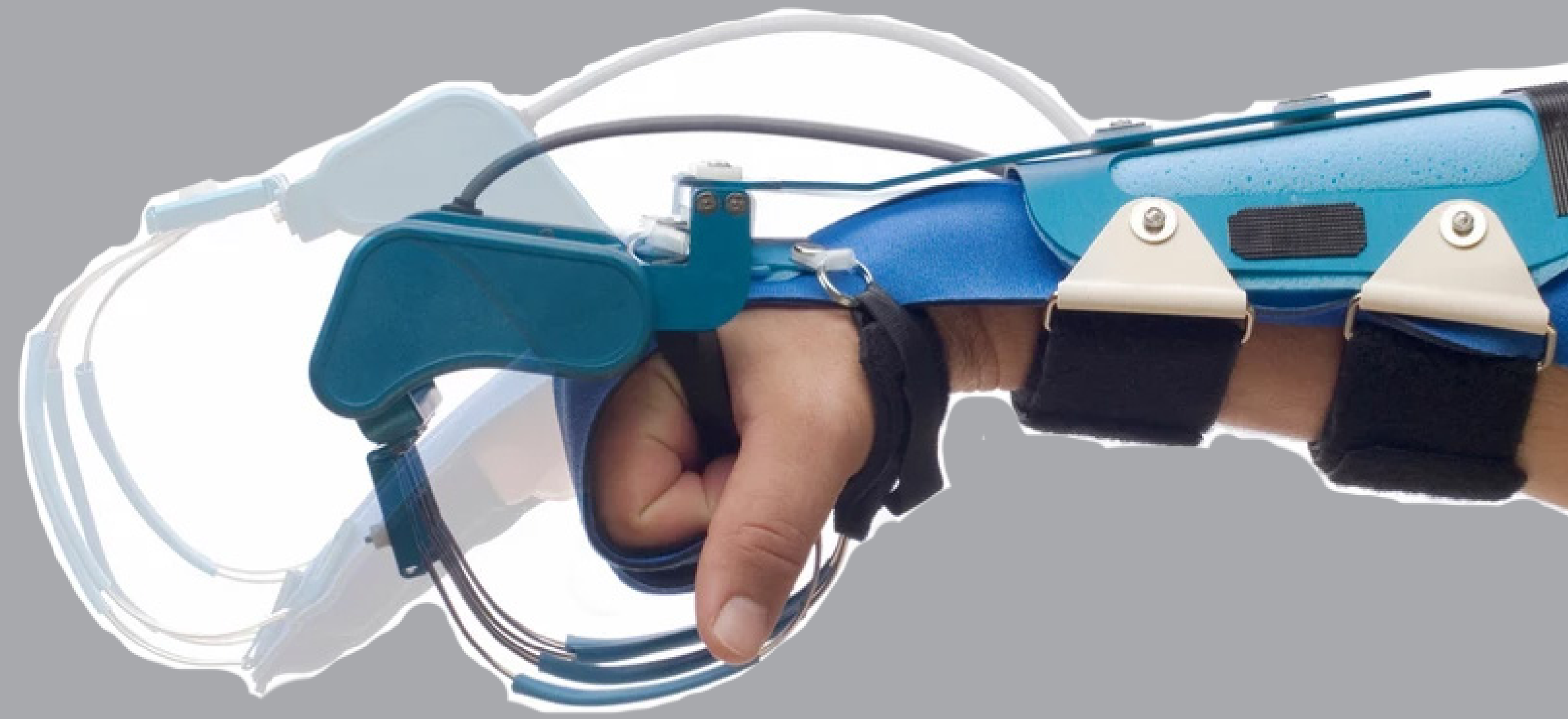
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CPM could demonstrate therapy advantage



SIGNIFICANCE STATEMENT

- For any patient with the need for treatment of stiffness or contractures after injury, the use of conservative versus more interventional approaches are sometimes debatable. Moreover, the use of Continuous Passive Motion (CPM) in these patients is also up for debate; for example, whether to use it, or whether to use it earlier versus later has always been an issue.

DATA SOURCE *Population and Results*

Population

- Patient sustained a work-related accident where he was covered with molten steel, resulting in a significant 70% Total Body Surface Area (TBSA) burn injury, including significant 3rd degree burns to his hands.
- This patient's chart was reviewed for details related to his response to CPM therapy.

Results

- Patient progressed to full passive range of motion (PROM) in the right hand.
- Despite a previous left-hand deformity which limited normal ROM, the patient at one point during the measurements, decreased to -45 and we were able to achieve a -15 by the end of his hospitalization.
- This showed a 30-degree improvement from worst to best measurements.
- CPM in this patient seemed to contribute to better results.

Right Hand

	2/6/19	2/12/19	3/6/19	3/26/19	4/5/19	4/19/19	4/30/19	5/9/19	5/17/19	5/23/19
MCP flexion	5	40	50	60	75	60	65	65	75	90
MCP extension	0	0	0	0	0	0	0	0	0	0
PIP flexion 2	80	80	70	85	90	100	95	90	75	95
PIP flexion 3			70	85	90	100	95	90	75	95
PIP flexion 4			70	85	90	100	95	90	75	95
PIP flexion 5			70	85	75	100	95	90	75	95
PIP extension 2	-5	0	0	0	0	0	0	0	0	0
PIP extension 3			0	0	0	0	0	0	0	0
PIP extension 4			0	0	0	0	0	0	0	0
PIP extension 5			0	0	0	0	0	0	0	0
DIP flexion	15	30	50	40	35	45	35	35	30	30
DIP extension	0	0	0	0	0	0	0	0	0	0

Left Hand

	2/6/19	2/12/19	3/16/19	3/26/19	4/5/19	4/19/19	4/30/19	5/9/19	5/17/19	5/23/19
MCP flexion	5	40	35	40	60	35	60	50	45	60
MCP extension	0	0	0	0	0	0	0	0	0	0
PIP flexion 2	80	80	70	70	80	105	90	65	75	90
PIP flexion 3	80	80	70	70	80	105	95	75	90	90
PIP flexion 4	80	80	70	70	80	105	85	80	85	90
PIP flexion 5	80	80	70	70	80	75	80	75	80	90
PIP extension 2	-15	-25	-35	-25	-25	-10	-10	0	-5	0
PIP extension 3	-15	-30	-35	-40	-45	-20	-20	-15	-15	-15
PIP extension 4	-15	-20	-35	-25	-35	-10	-10	-10	-10	-10
PIP extension 5	-15	0	0	0	0	-5	-5	-5	-5	0
DIP flexion	15	10	50	40	55	55	20	30	30	30
DIP extension	0	0	0	0	10	-10	0	-5	0	0

LESSONS LEARNED

- Early use of CPM as an adjunct to PT/OT on burned hands in a patient with large, extensive hand-burn injuries proved to exceed our expectations for PT/OT.
- This treatment assisted in achieving better than expected measurements in bilateral MCPs, PIPs and DIPs.
- Because this study is limited to a single case, we feel continued use of CPM in these types of injuries could demonstrate an advantage.

There are no disclosures to make from any authors.

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