



**Service Priorities and Programmes  
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**Application of Mirror Therapy for Stroke Patient with Type 1 Complex Regional Pain Syndrome : A Case Study**

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**Introduction**

Hemiplegic upper extremity is a common and disabling consequence of stroke that can lead to activity limitation (Zoe & Maria, 2013). In addition to hemiplegic upper limb, an incidence of 48.8% complication with complex regional pain syndrome (CRPS) is reported (Hilal, Funda, OnderMurat & Betigul, 2007). Common symptoms of CRPS include pain, joint stiffness, skin changes and edema (Hilal, Funda, OnderMurat & Betigul, 2007). Stroke complicated with CRPS is challenging in rehabilitation. In order to treat stroke with CRPS, there is emerging evidence of mirror therapy that can improve both motor recovery of a hemiplegic upper limb and symptom relief of CRPS (Cacchio, Blasis, Necozone, Orio & Santilli, 2009). Furthermore, a significant effect on visuospatial neglect for patients in the individual mirror therapy was shown (Holm, Bayne, Wurg, Zange, 2012). In this study, the clinical application of mirror therapy on a stroke case with type 1 CRPS were investigated. The practical use and the effects of treatment were examined.

**Objectives**

To evaluate the effects of mirror therapy on visuospatial neglect, upper-extremity motor recovery and hand related functioning of a stroke inpatient with type 1 CRPS during rehabilitation phase

**Methodology**

A single case study of a patient suffered from right middle cerebral artery infarct with haemorrhagic transformation complicated by type 1 complex regional pain syndrome was conducted. Twenty minutes of mirror therapy was done 5 days per week in addition to conventional multidisciplinary rehabilitation for 4 weeks. Albert's test, Modified Barthel Index, Functional Test of Hemiplegic Upper Extremity--HK version (FTHUE-HK) and Visual Analogue Scale of pain (VAS) were used as outcome measures.

## **Result**

Results: There were marked improvements in unilateral neglect (Albert's Test from 60% to 0%), Activities of Daily Living (Modified Barthel Index from 21/100 to 40/100) and pain (VAS from 8/10 to 4/10) after mirror therapy. No significant difference were found in FTHUE-HK of left upper limb. Discussion: Mirror therapy may have a positive effect on ADL function, unilateral neglect and pain reduction in a patient suffered from type 1 complex regional pain syndrome and hemiplegic upper extremity after stroke. Use of other more sensitive assessment tools may help to detect subtle changes of upper limb function after receiving mirror therapy. Conclusion: The above case study preliminarily showed positive effect of mirror therapy in ADL, unilateral neglect and pain reduction of patient with hemiplegic upper limb and type 1 CRPS after stroke. The effectiveness of mirror therapy in stroke rehabilitation can be further explored.