Myofascial Release Therapy in Rehabilitating Hand Function in RepIanted Upper Limb: A Case Report

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Background
Rehabilitation of a replanted upper limb is a complex and time-consuming multidisciplinary process that aims to restore maximal function of the patient's replanted extremity. A recovering patient typically presents with a considerable amount of physical scarring due to the traumatic damage caused by their original injury, and their subsequent surgical treatment. Many are also emotionally scarred by their traumatic experiences. lt has been suggested that myofascial release treatment (including myofascial unwinding) can help people recover from physical and emotional scarring that follow traumatic injury.We accordingly explored whether these treatment technique might assist in the rehabilitation of one of our patients.

Aim
Conduct a preliminary, single-case study to ascertain whether myofascial release treatment might possibly serve as a useful adjunct in rehabilitating the hand function in a patient following the surgical replantation of a traumatically amputated upper limb.

Method
Our subject was a 15 year old girl whose proximal level of her left arm was traumatically amputated during a motorbike accident. Her left arm was successfully reattached surgically ten hours following her accident. Her general rehabilitation programme commenced eight weeks later, and was, another two months later augmented by the surgical relocation of the proximal end of her left Latissimus dorsi tendon, which made it possible for actively flex her elbow. Six months after her original injury, she presented for hand therapy. At this time, she was painfully scarred over her much of back and left upper limb: 9 (severe) on a 10-point visual analogue scale. lnjured left shoulder movement was limited: Flexion 30º (passive), 20º (active); Abduction 50º (passive), 45º (active). She was unable to actively flex her elbow, despite the tendon transfer surgery. Several myofascial release treatment techniques such cross hand release and direct scar tissue release were used across, above, below and direct the incision side at the beginning of the her hand therapy were incorporated in five, one hour hand therapy sessions during a 2-week period. This course of treatment was intended to assist with achieving overarching rehabilitative aims of: decreasing scar-related hypersensitivity and pain, help improve soft tissue gliding capacity prerequisite to the restoration of active movement, prevent the development of fibrous adhesions and joint stiffness.

Before surgery

8 weeks later After replantation

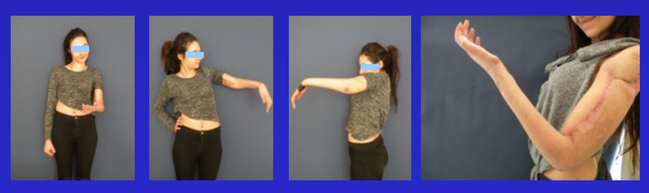
After Tendon transfer surgery

Before myofascial release theraphy ⇒

Flexion 30º (passive), 20º (active); Abduction 50º (passive), 45º (active)

Myofascial release theraphy ⇒

After myofascial release theraphy ⇒



Flexion 90º (passive), 80º (active); Abduction 95º (passive), 70º (active).

Result
Reassessment after five myofascial release treatment sessions showed the subject had begun to actively flex her elbow. Her left shoulder movement had improved - Flexion 90º (passive), 80º (active); Abduction 95º (passive), 70º (active). Her experience of hypersensitivity and pain had diminished (3/10).

Conclusions
This preliminary study suggests myofascial release therapy might possibly be a useful adjunct in the post-operative rehabilitation of a patient whose upper limb has been reattached following its traumatic avulsion. We recommend the effectiveness of this manual treatment approach is evaluated more fully.

References

1. Barnes,F,J.Healing Ancient Wounds,20l0
2. Duncan,R.Myofascial Release . 2014