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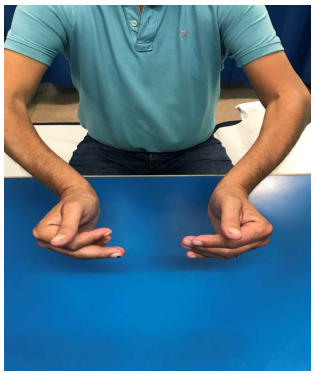
Managing complexity in a rare condition: a single case report of novel forearm tendon transfers for inclusion body myositis

[1]Karen Belward, [2]Professor David Warwick, [3]Sunitha Narayan

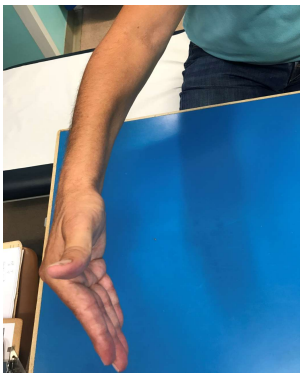
[1]Clinical Specialist Physiotherapist, Therapy Services Department UHS, [2]Consultant Hand Surgeon UHS, [3]Clinical Neuromuscular Co-ordinator & Specialist Physiotherapist, Neurology Department UHS

Introduction

A single case report of forearm extensor to flexor tendon transfers and rehabilitation for Inclusion Body Myositis in a 56 year-old gentleman. Novel surgery, to our knowledge our institution is the fourth UK centre to perform such surgery for the complex condition. DASH, power and 9-hole peg test used to evaluate outcome.



Pre-operative: marked loss of bilateral long finger flexion, he is unable to do a tip-to-tip pinch



Pre-operative: concavity of forearm associated with IBM and long flexor weakness

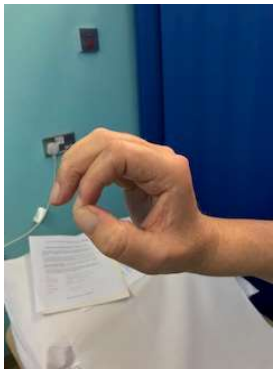
Purpose

Inclusion body myositis (IBM) is an acquired, inflammatory myopathy presenting in the over 50´s. Characterised with progressive muscle weakness and atrophy in the quadriceps and long finger flexors. Currently, this complex health problem, that has a prevalence of 5-10 per million, does not have an effective treatment or cure, therefore forearm tendon transfers provide a viable option to address finger weakness in suitable patients. The marked long finger flexor weakness poses a significant limitation to patients´ quality of life and functional abilities. This case demonstrates how physiotherapists can be pivotal in managing complex and challenging conditions through multi-disciplinary team (MDT) working, demonstrating how our roles evolve in response to complex cases.

Methods

The gentleman was seen pre-operatively by the MDT (clinical specialist hand physiotherapist, neuro-muscular physiotherapist and hand surgeon) and post-operatively with primary outcomes taken at 12 weeks post-operatively. The quickDASH (disabilities of arm, shoulder and hand), strength testing and 9-hole peg test were used as outcome measures. The 9-hole peg test, is a brief, standardized, quantitative test of finger dexterity, chosen due to the larger peg size for the patient to be able to handle.

Video conference call for 4-week follow up as the patient lived a significant distance away



8 weeks post-op: the patient is able to form a tip-to-tip pinch

Results

The operation involved transferring extensor carpi radialis longus (ECRL) to flexor pollucis longus (FPL) and extensor carpi ulnaris (ECU) to animate a mass flexor action to flexor digitorum profoundus (FDP) of all four fingers in the non-dominant hand. Both hands were equally affected by flexor weakness pre-operatively.

Pre-operatively the quickDASH score was 61, at 12-weeks post-operatively it reduced to 48. The quickDASH is a reliable and validated outcome where a lowering of the score is favourable and an 8 point change is considered clinically important. While the 9-hole peg test pre-operatively was 64.9 seconds, post-operatively it was quicker at 45.8 seconds in the right non-dominant hand. Pinch and grip testing pre-operatively were 0Kgs, post-operatively pinch was 0.5Kgs and grip was 1Kg.

Right operated hand at 13 weeks post-op compared to left non-operated hand manipulating a 9-hole peg test peg

Conclusion

The patient stated that the surgery has been "life-changing" with improved quality of life, he would recommend the surgery and he has the same surgery planned for the dominant hand. However, it is not possible to predict how long lasting the functional improvements will last in this progressive disorder.

The case demonstrates that MDT working (hand and neuro-muscular physiotherapists, neurologist and hand surgeon) is key to managing patients with complex conditions. Treatment of disabling finger flexor weakness with tendon transfers can be a very effective option in the treatment of some patients with IBM.

Implications

Reporting this novel case aims to raise awareness amongst the physiotherapy profession of an option to help manage the functional hand loss seen in IBM, when the rarity of the condition will not enable a clinical trial. MDT working pre-operatively, gaining an understanding of the patients current physical state and needs are key to planning such an intervention and providing the specialist hand therapy post-operatively.

Acknowledgements

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Contact

karen.belward@uhs.nhs.uk