

Reference

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Targeted muscle reinnervation in the initial management of traumatic upper extremity amputation injury

HAND (2014) 9:253–257.

Products

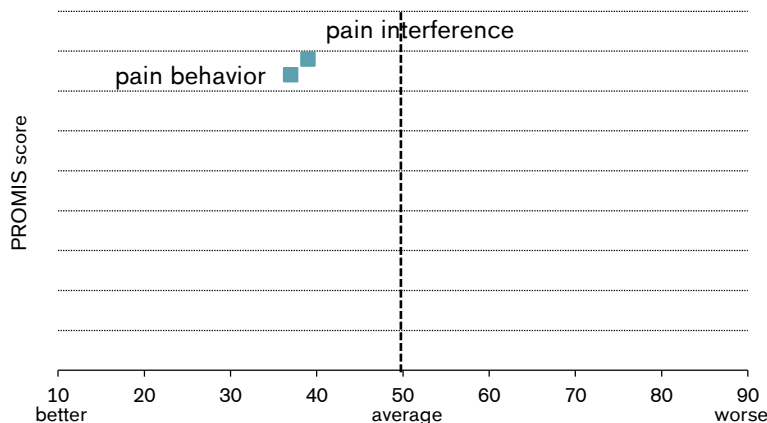
Myoelectric prosthesis in combination with Targeted Muscle Reinnervation

Major Findings

The effect of Targeted Muscle Reinnervation (TMR) on neuroma pain in an amputee with traumatic shoulder disarticulation:

- **The patient exhibited no evidence of neuroma pain on clinical exam eight months postoperatively.**
- **Patient was able to use a myoelectric prosthesis**

Pain behavior and pain interference in shoulder disarticulation amputee



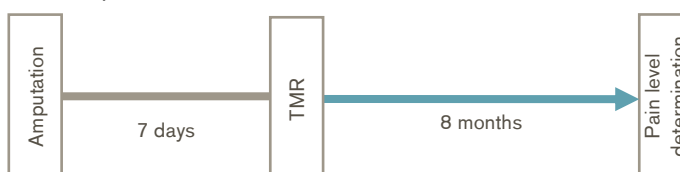
This figure demonstrates the patient's PROMIS score results for pain behavior and pain interference. The square is the estimated score. A score of 50 is average for the US general population, and most people will fall between 40 and 60. The estimated pain behavior score indicates that the patient's pain behavior is very low, within the 10th percentile for the general population. The pain interference score reveals that the patient falls in the lowest 1% of the general population.

Population

| | |
|--------------------|---|
| Subjects: | one (gender) (unilateral?) shoulder disarticulation amputee |
| Amputation causes: | trauma |
| Age at TMR: | 54 years |
| Follow up time: | 8 months |

Study Design

Case report:



One week after the initial traumatic amputation the TMR procedure was conducted to prevent painful neuroma pain and allow for myoelectric prosthetic use in the future. Eight months after TMR surgery pain level was measured.

Results

| Body Function | | Activity | | | Participation | Others | |
|---------------|------|-----------------------|------------------|----------------------------------|--|----------|------------------|
| Mechanics | Pain | Grip patterns / force | Manual dexterity | Activities of daily living (ADL) | Satisfaction and Quality of life (QoL) | Training | Technical aspect |

| Category | Outcomes | Results for TMR: | Sig.* |
|----------|--|---|-------|
| Pain | Neuroma pain | Eight months following the procedure, the patient demonstrates no neuroma pain on clinical exam. | n.a. |
| | Phantom sensations and phantom pain | The patient reports phantom sensations, but no phantom pain. | n.a. |
| | Patient Reported Outcome Measurement Information System (PROMIS) | The patient reports minimal pain-related behavior (37 on PROMIS score) or pain interference (39 on PROMIS score). | n.a. |

* no difference (0), positive trend (+), negative trend (-), significant (++/--), not applicable (n.a.)

Author's Conclusion

"Targeted muscle reinnervation may be considered in the acute trauma setting to prevent neuroma pain and to prepare patients for myoelectric prostheses in the future." (Cheesborough et al., 2014)

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