Right Index Finger Pollicization For Traumatic Amputation At Metaphyseal Base Of Thumb Metacarpal

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The thumb plays a crucial role in hand function, contributing to more than half of the hand's overall capabilities. Its unique anatomical features and specialized structures are essential for intricate manipulations and powerful pinching actions. Traumatic thumb amputations significantly impair hand function, necessitating advanced surgical techniques to restore it. Index finger pollicization has emerged as a viable and effective method to recreate the thumb's functionality. This procedure has evolved over decades, integrating refined techniques that enhance both the functional and aesthetic outcomes. The addition of targeted muscle reinnervation has further improved the restoration of thumb movement and sensation, offering good outcomes for patients suffering from thumb loss.

Purpose:

In this technique video, we present a complex right index finger pollicization procedure with target muscle reinnervation to address a traumatic amputation of the thumb. This video provides a comprehensive guide to the technique and provides educational operative pearls at every step.

Methods:

The anatomy, examination, diagnosis, and treatment options for the index finger pollicization are reviewed. We present a case of a 45-year-old right-hand dominant female status-post right thumb amputation after sustaining a traumatic injury to the right forearm during a motor vehicle accident. The patients complained of difficulties with ADLs and experienced phantom pain. Given her clinical picture, she was indicated for a right index finger pollicization procedure with target muscle reinnervation.

Results:

The post-operative clinical outcome showed well-healed incisions, and the patient reported doing well without wound dehiscence, drainage, or dehiscence. Furthermore, the patient shows significant improvement in passive and active range of motion, as well as grip strength.

Conclusion:

The pollicization technique with targeted muscle reinnervation is a viable and effective surgical option for traumatic amputations of the thumb to restore opposition grasp and improve ADLs. Appropriate patient selection and adherence to post-operative rehabilitation are crucial for optimal outcomes.