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Work-simulated rehabilitation to improve function post trigger thumb release: A case report

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Abstract

Background: Complications following trigger thumb release, such as stiffness or persistent pain, can impede an individual's ability to regain full functional mobility and may prolong work absence. This case report describes the physical therapy management of an adult after surgical trigger thumb release, emphasizing work-simulated activities intended to facilitate an accelerated return to work.

Case presentation: The patient is a 63-year-old female seeking treatment following a work-related trigger thumb injury. After conservative measures failed, an open trigger thumb release was performed. Outpatient physical therapy was initiated four weeks post-op.

Intervention: The patient was seen for a total of 10 visits, receiving manual interventions, strengthening, and therapeutic activities. Particular emphasis was placed on work-simulated tasks to maximize the potential for a quick and safe return to work.

Outcomes: Primary outcome measures were assessed at initial evaluation, re-evaluation, and discharge. The patient demonstrated improvement in grip strength (involved, non-dominant hand increased by 27 pounds) and pinch grip (by 8 pounds). Left thumb Carpometacarpal (CMC) and Metacarpophalangeal (MCP) motion increased in all planes. Scores on the Quick Disability of Arm, Shoulder, and Hand (QuickDASH) and the Upper Extremity Functional Index (UEFI) demonstrated restored function, especially with work-related duties, and complete relief of pain.

Discussion and conclusion: This case report demonstrates the effectiveness of early post-operative physical therapy, centered on work-simulated activities, in restoring function and expediting return to work following trigger thumb release. Integration of work-simulated activities was successful in improving motion, strength, and efficient return of functional activities, thus supporting limited loss of productivity and wages.

Keywords: Trigger finger disorder; Thumb; Return to work; Upper extremity; Rehabilitation; Physical therapy; Exercise therapy.

Background

Stenosing flexor tenosynovitis, also known as trigger finger or trigger thumb, is a common condition affecting approximately 3% of the general population [1]. It is typically caused by repetitive use of the fourth digit or thumb [1]. Most often affecting the A1 pulley sheath of the Metacarpophalangeal (MCP) joint, the condition is caused by narrowing of the flexor pulley sheath with accompanying hypertrophy and inflammation, many times leading to the formation of nodules along the tendon. Co-morbid diseases including diabetes, amyloidosis, carpal tunnel syndrome, gout, thyroid disease, and rheumatoid arthritis, as well as trauma with a resultant injury of the A1 pulley (i.e. fall on an outstretched hand), can increase the likelihood of developing trigger thumb [1].

Flexion of the thumb relies on a specialized pulley system consisting of one oblique pulley and three annular pulleys. The pulleys are segments of fibrous tissue located at strategic points along the flexor tendon sheath to create a fulcrum for smooth flexion and extension of the digit while facilitating tracking of and preventing bowstringing of the flexor tendon [2]. The pulley system begins with the A1 pulley at the volar plate of the MCP joint, followed by the variable Annular (Av) pulley located typically in the proximal portion of the proximal phalanx, the oblique pulley located at the proximal half of the proximal phalanx, and distally the A2 pulley anterior to the interphalangeal joint [3]. Of the annular pulleys, A1 and A2 pulleys are distinctly identifiable, while the Av pulley has four possible anatomic arrangement variations [3]. In Type I, the Av pulley is absent. Type II configuration demonstrates the Av pulley is present with a gap between the A1 and Av pulley and the Av and oblique pulley. In Type III, the Av pulley blends into the oblique pulley, creating the look of a y-shaped fibrous band. The Type IV pulley consists of a fused A1 and Av pulley system. (Figure 1) demonstrates the different pulley configurations. The anatomical variations in the Av pulley influence tendon tracking and joint mechanics. Understanding the thumb pulley system is important in guiding treatment, as the different Av variations can impact mobility, grip strength, and choice of therapeutic interventions.

Trigger thumb typically causes discomfort and functional limitations, most often reported as stiffness, progressive pain with flexion, painful clicking, and locking of the digit during extension or the inability to move out of a flexed position [1]. Upon examination, patients will often demonstrate a tender area of swelling at the distal palmar crease of the first digit and potentially a flexed and locked digit with snapping and pain with attempts to perform extension. Clinical diagnosis is typically made based on patient reports and physical examination as described above. Ultrasound, the preferred imaging modality for this condition, may be further utilized for definitive diagnosis of the condition. Diagnostic ultrasound will provide demonstration of thickening of the pulley, inflammation, and/or irregularity of the flexor tendon; however, it may not allow for identification of the exact pulley involved [1].

Depending on the severity and chronicity of the condition, trigger thumb may be treated conservatively through a steroid injection, splinting, thermal modalities, and activity modification with reduction of repetitive gripping activities [4]. If conservative measures fail, trigger thumb surgical management may be appropriate. Moderate evidence points to a localized corticosteroid injection as a safe and effective short-term management option; however, it may be associated with an increased risk of recurrence within six months of injection [5]. Strong evidence further suggests that surgical release is a safe option for management if corticosteroid injection fails [5].

Surgical management can involve either a percutaneous release or an open release. In the percutaneous release, an 18-gauge needle is inserted through the skin at the metacarpophalangeal flexion crease and into the A1 pulley. The needle tip is then used to incise the pulley via a sweeping motion [6]. Complete release is confirmed by performance of full, active thumb motion without evidence of locking. Open release is performed via a transverse incision made at the metacarpophalangeal flexion crease. This opening allows for blunt dissection of the A1 pulley, with the neurovascular bundles protected with the use of retractors [6]. The free excursion of the flexor tendon is used to confirm a successful resection. A comparison of the two procedures demonstrates reduced residual pain at 3 months in the percutaneous release compared to the open release, as well as less wound scarring. However, recurrent triggering, caused by hypertrophic changes and scarring at the A1 pulley post-op is similar between both surgical options [6].

Although trigger thumb release is generally safe and effective, complications can occur, such as stiffness, scarring, persistent pain, or infection. Even minor complications may inhibit recovery and impede a prompt return to full activity, including work responsibilities. Typical physical therapy rehabilitation following surgery focuses on range of motion activities, gripping, and modality use for pain management. The purpose of this case report is to describe the physical therapy management of an adult following trigger thumb release, with a focus on work-simulated activities, in order to return to full work duties in a short time frame.

Case presentation

The patient was a 63-year-old right-hand-dominant Caucasian female with a co-morbid history of diabetes mellitus type 2, who presented to physical therapy four weeks after left trigger thumb release. She initially injured her left thumb at work, where she is employed as a cafeteria manager. The injury to her thumb occurred as she was pulling an industrial-sized can of corn from an overhead shelf; the can slipped, fell onto her hand, and forced her thumb into hyperextension. Patient was evaluated in an urgent care facility, where radiographs ruled out fracture, and she was referred to an orthopedic specialist.

Upon evaluation by the orthopedic surgeon, a diagnosis of trigger thumb was made based on her clinical presentation and symptoms. Conservative management was initiated, including splinting, activity modification, and nonsteroidal anti-inflammatory drugs for pain management. At her one-month follow-up, the patient reported no meaningful improvement in pain or function. Conservative measures were deemed unsuccessful, and open surgical release was scheduled, taking place seven weeks after the initial injury.

Post-operatively, the patient's hand was wrapped with a light dressing, and the patient was instructed to return for an orthopedic follow-up in four weeks. At her post-op follow-up, the pa-

tient was referred to physical therapy.

Physical therapy was initiated eleven weeks after the initial injury and four weeks post-surgery. At her initial evaluation, the patient reported no other significant medical history or prior fractures, aside from a history of hysterectomy. Her primary complaints were pain at the incision site, stiffness of the left thumb, and difficulty performing basic Activities of Daily Living (ADLs) and work duties. She also described intense, sharp, shooting pain with any contact to the incision area. Clinical findings included joint hypomobility with inability to make a fist or perform opposition, decreased strength, and decreased passive range of motion with significant soft tissue restriction. The patient's overall goal was to regain functional mobility of her thumb and return to work without restrictions. Written informed consent was obtained, and the patient agreed to participate in this case report.

Initial clinical impression

The patient was referred to physical therapy by her orthopedic surgeon four weeks post-surgery. She was otherwise healthy, with no comorbidities that would impede completion of therapy, and was given work restrictions limiting lifting and carrying to less than 10 pounds. At the initial evaluation, the patient expressed concerns about possible opening of the incision site. She was promptly evaluated at urgent care following her therapy session, where her wound was found to be healing well without signs of infection. Additional steri-strips were applied to ensure the incision remained clean and protected.

Based on this clinical impression, it was deemed appropriate for the patient to undergo the following examination procedures: assessment of left hand functional strength using a Jamar handheld dynamometer, measurement of left lateral pinch strength, evaluation of passive and active range of motion of the left thumb, and assessment of pain level. Functional outcome measures selected for this case included the Quick Disability of Arm, Shoulder and Hand (QuickDASH) with an additional work module, and the Upper Extremity Functional Index (UEFI), both used to capture self-reported limitations related to the injury. The collected examination data served to develop a comprehensive plan of care addressing her specific impairments and functional limitations.

Examination data

Handheld dynamometry

Hand grip strength is an important indicator of the overall health, as decreased grip strength has been shown to correlate with sarcopenia, decline in general strength, and overall loss of functional ability [7]. The Jamar hand dynamometer has been established as the gold standard in assessment of hand grip strength with high validity and test-retest reliability [8]. Following recommended positioning, the patient was seated in a straight-backed chair with armrests, with her shoulders in a neutral and relaxed position, elbow flexed to 90 degrees, the forearm and wrist in neutral, and the Jamar dynamometer set to the second handle position [9]. The patient was instructed to squeeze the handle for three seconds for a total of three trials; results were averaged and recorded in pounds. At initial evaluation, the patient's grip strength on the involved hand was 4 pounds, compared to 40 pounds on her uninvolved dominant hand. Norms for grip strength reported by Gunther et al. are a minimum left grip strength of 24.4 pounds and a median left grip strength of 55 pounds for females ages 60-69 years old [10]. To demonstrate clinically meaningful improvement, a goal increase of 13.2 lbs was set, based on Nitschke et al [11].

Lateral/Key pinch grip strength

Though less studied than grip strength, lateral pinch strength correlates highly with grip strength and moderately with manual dexterity [12]. Due to the involvement of the A1 pulley of the left thumb, it was determined that pinch strength was essential to evaluate function of the flexor tendon. The patient was placed in a sitting position with the considered standard positioning [13] her left shoulder in a neutral and relaxed position, elbow flexed to 90 degrees, the forearm and wrist in neutral, and instructed to place the hydraulic pinch gauge between the index finger and thumb. The patient was instructed to pinch and hold for three seconds, repeated for three trials, and averaged. Crosby, Wehbé, and Mawr reported the median pinch strength of female non-dominant hands is 19 pounds [14] however, age-related changes are not accounted for. At initial evaluation, the patient's pinch strength measured 4 pounds on her left hand versus 11 pounds on her right. The minimal clinically important difference (MCID) of thumb pinch strength is 0.33 kilograms or 11.6 ounces [15].

Range of motion testing

Thumb Active Range of Motion (AROM) was measured and compared, post-operative thumb assessed against the AROM of the uninvolved dominant thumb. Standard goniometric positioning and testing procedures, as described by Norkin [16], were followed for movements of the Carpometacarpal (CMC) joint, Metacarpophalangeal (MCP) joint, and the Interphalangeal (IP) joint. All motions were recorded without pain and within normal limits throughout the right thumb. On the left, the patient demonstrated limitations with CMC extension, abduction, and opposition, as well as decreased MCP extension and flexion, all causing increased pain with end range of motion. Initial range of motion data can be found in (Table 1).

Numerical pain rating scale

Pain can significantly influence activity performance and participation. Studies show that pain is highly correlated to physical dysfunction and perceived disability, particularly in upper extremity injuries [17]. The Numerical Pain Rating Scale (NPRS), ranging from 0 to 10 in which 0 indicates no pain and 10 indicates the worst pain imaginable, is the preferred method for pain assessment in older populations and those with chronic pain [18]. Patients are instructed to choose a number to indicate their pain level. The patient's initial pain rating at evaluation was 0/10 at rest, however increased to 3/10 with movement, with additional reports of sharp, burning sensation with light touch at the incision site. The MCID to demonstrate improvement in chronic musculoskeletal pain is 1 point change on the NPRS [19].

Quick disability of arm, shoulder, and hand plus work module

The Quick Disability of Arm, Shoulder and Hand (QuickDASH) questionnaire is an 11-item self-reported questionnaire to assess the impact of an upper extremity injury or condition on function. It is a shortened version of the original 30-item Disability of Arm, Shoulder and Hand outcome measure. The QuickDASH also has specific optional modules that can be added for additional information on the impact the condition has on work activities and sport/music activities. Each optional module has

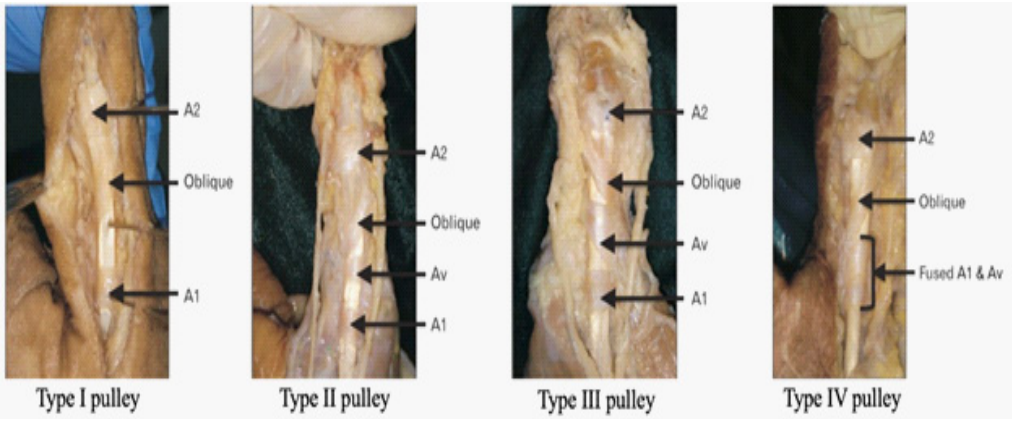

Figure 1: Available configurations of the thumb pulley system.
The anatomical variations in the Av pulley influence tendon tracking and joint mechanics. Understanding the thumb pulley system is important in guiding treatment, as the different Av variations can impact mobility, grip strength, and choice of therapeutic interventions.
Adapted from Gnanasekaran D, Veeramani R, Karuppusamy A. Morphometric study of pulleys of the thumb. Anatomy and Cell Biology. 2018; 51(2). doi:10.5115/acb.2018.51.2.71 [3].

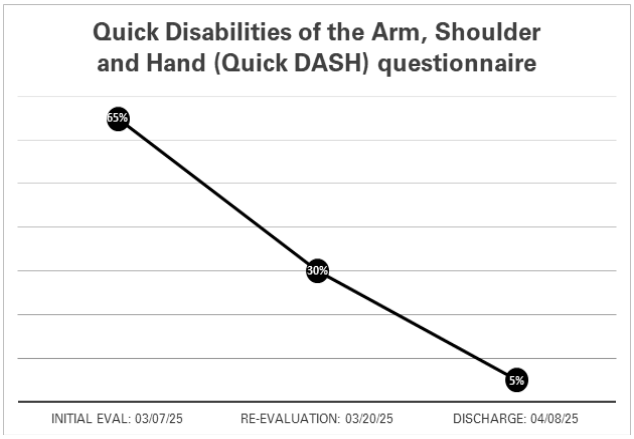

Figure 2: QuickDASH score of arm, shoulder, and hand disability at initial evaluation, at re-evaluation and at discharge

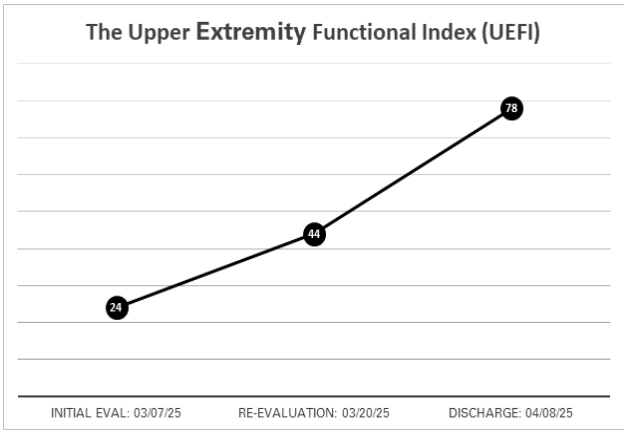

Figure 3: The Upper Extremity Functional Index (UEFI) at initial evaluation, at re-evaluation and at discharge

Table 1: Tests and measures of left thumb assessed at initial evaluation (IE), Re-Evaluation (RE), and Discharge (DC)

Tests and measures	IE: 03/07/25	RE: 03/20/25	DC: 04/08/25
Grip strength	8 lbs	32 lbs	35 lbs
Lateral pinch strength	4 lbs	10 lbs	12 lbs
Thumb CMC extension AROM	0 deg	25 deg	25 deg
Thumb CMC abduction AROM	50 deg	60 deg	70 deg
Thumb CMC opposition AROM	lacking 0.5 cm	0 cm	0 cm
Thumb MCP extension AROM	-7 deg	-2 deg	0 deg
Thumb MCP flexion AROM	38 deg	45 deg	47 deg
Pain with movement: NPRS	3/10	0/10	0/10

Abbreviations: IE: Initial Evaluation; RE: Re-Evaluation; DC: Discharge; lbs: Pounds; deg: Degrees; cm: Centimeters.

The QuickDASH plus work module is a standardized patient-rated questionnaire that uses 15 items to measure physical function and symptoms. Higher scores indicate a greater level of disability and severity, whereas lower scores indicate higher function. The score ranges from 0 (no disability) to 100 (most severe disability). Minimal detectable change (MDC) has been calculated to be 11 percentage points [17].

The Upper Extremity Functional Index is an outcome measure that uses patient reported responses to quantify upper extremity function. Higher scores indicate improved function. The score ranges from 0 (severe dysfunction) to 80 (no functional limitation). Minimal Detectable Change (MDC) has been calculated to be 9.4 points [18].

Table 2: Interventions performed during therapy sessions. Progression was determined at each exercise session based on patient's tolerance and protocol.

Intervention type	Intervention	Progression
Therapeutic exercise	Upper body ergometer x 10 minutes (5 min forward and 5 min backward)	Added resistance
	Left thumb self PROM with end range stretch for extension, abduction, and opposition x 3 min each	
	Putty gripping x 3 min with 5 sec holds	Added resistance
	Putty finger flexion and extension	Added resistance
	Wrist AROM-flexion, extension, radial deviation, ulnar deviation	Added gradual resistance
	Pronation/supination with flex bar	Added resistance, transitioned to dumbbells
Manual therapy	Cross friction massage for scar tissue mobilization x 5 min	
	PROM at CMC joint with manual overpressure in all available planes x 5 min	
	Manual desensitization massage x 5 min	Progressing textures
Neuromuscular reeducation	Finger opposition x 3 minutes	Added goal of speed and accuracy, alternated with added resistance
	Tendon glides x 5 min	
Therapeutic activities	Busy boards: working on buttons, lacing, and snaps x 3 min each	
	Screwdriver board: tightening differing size screws, bolts, and knobs while utilizing tools	Increased time and speed
	Velcro board: lateral pinch grip twisting (simulating turning a key), long handled pronation and supination	Increased time and resistance
	Fine motor opposition using beans and performing careful placement in Finger Web	Initially performed with fingers only, progressed to performance with clothespin, increased goal of speed and accuracy
	Typing practice: use of computer and keyboard to type stories, focusing on thumb AROM	Increased goal of speed and accuracy
	Box lifts: from floor to waist level and waist level to overhead	Increased resistance, repetitions, and varied size of boxes to simulate differing item sizes used in industrial kitchens
	Grip endurance with carrying activities: Farmer carries, suitcase carries, lumbrical grip carries, large tray carries	Increased resistance and time
	Sled push/pull	Increased resistance, distance, and repetitions
	Towel wringing	Increased time and thickness of towel

an additional four items. The optional work activities module was utilized in this case. Higher scores indicate a greater level of disability and severity, whereas lower scores indicate higher function. The score ranges from 0 (no disability) to 100 (most severe disability). Minimal detectable change (MDC) has been calculated to be 11 percentage points [20]. At initial eval, the patient's overall QuickDASH was scored at 65%, indicating a moderate to high level of disability.

Upper extremity functional index

The Upper Extremity Functional Index (UEFI) is another self-reported questionnaire to assess patient function on a 20-item scale. While there is some overlap between the QuickDASH and the UEFI, the UEFI includes more ADLs and Instrumental Activities of Daily Living (IADL) related questions. The combination of the QuickDASH and the UEFI was utilized to get a full view of the patient's baseline function and track overall improvement. UEFI scores range from 0 (severe dysfunction) to 80 (no functional limitation), with an MDC of 9.4 points [21]. The patient's initial score was 24 points on the UEFI, indicating severe dysfunction.

Plan of care

Based on her clinical presentation of decreased grip and pinch strength, impaired thumb AROM, and limitations in functional activity performance, the patient was deemed appropriate for physical therapy and inclusion in this case report. Without a specific post-surgical protocol provided by the referring physician, a Google search yielded the the Jamestown Regional Medical Center (JRMC) Trigger Thumb Post-op guidelines (see Appendix 1) [22]. The JRMC guidelines were followed to ensure safe progression of activities and rehabilitation [22].

At the initiation of PT services, the patient was three weeks post-op and placed within Phase III of the JRMC trigger thumb release guidelines. As this case involved workman's compensation insurance, initial authorization allowed for six physical

therapy sessions, with a scheduled re-evaluation at visit six. The frequency of therapy was three times a week for two weeks. Upon re-evaluation, based on updated measurements and goal progression, an additional four visits were recommended. Following a one week delay for insurance authorization, therapy resumed at a frequency of two sessions per week for two weeks, ensuring continuity and tailored progression throughout her rehabilitation plan.

Intervention

The patient participated in outpatient physical therapy in a clinic specializing in work-related injuries. Each 60-minute session included manual interventions, strengthening, and therapeutic activities. Manual interventions included scar tissue mobilization, desensitization activities, passive ROM, and joint mobilizations. Traditional strengthening was included to ensure stabilization of the shoulder, elbow, and wrist, in addition to hand intrinsic strengthening. Neuromuscular re-education exercises focused on improving motor coordination, movement accuracy, and speed.

Per the patient's subjective reporting of her job duties, she needed to be able to carry large trays weighing up to 25 pounds, lift supplies from the floor to waist up to 50 pounds, overhead lifting of large circumference items weighing up to 10 pounds, and perform fine motor skills such as typing, turning knobs of varying sizes, and handling and sorting coins. Therapeutic activities were therefore tailored to simulate job-related duties to ensure quick return to full work duty.

At the outset, it was noted that the patient had not been completing prescribed ROM exercises prescribed by her orthopedic specialist. Accordingly, an emphasis was placed on patient education regarding the importance of adherence to her Home Exercise Program (HEP) as prescribed by her treating physical therapist.

Each session began with a review of symptoms since the previous session and a discussion of progress in ADLs and work-related activities. Warmup consisted of exercise on the Upper Body Ergometer, followed by self-passive stretching focusing on thumb extension, flexion, and abduction. Manual techniques included cross-friction massage to reduce scar adhesions and improve tissue mobility, as well as graded desensitization therapy using progressively textured materials and increasing pressure as tolerated.

The primary focus of each session was engagement in functional therapeutic activities, emphasizing ADLs and work-simulated exercises to improve overall functional mobility and a timely return to work duties, including the ability to meet lifting demands. The patient remained appropriately challenged as she progressed with changes in resistance, speed, goal of accuracy, and increasing endurance with repetitive activities, to match the requirements of her work. All care and exercises were monitored and directed by a student physical therapist and supervised by a licensed physical therapist. (Table 2) details the intervention and progression.

Outcomes

Formal data collection was performed at initial evaluation, at visit 6, and at visit 10 (discharge). The patient made steady gains throughout her four weeks of physical therapy, assisted by the patient's adherence to her home exercise program, which was revised weekly to optimize strengthening and mobility. Resistance was gradually increased for all therapeutic exercises and activities, resulting in improved performance with work-related activities.

Active thumb ROM improved to within normal limits in all planes, improving ease of movement and enabling the patient to hold larger objects as required by her job. Grip strength improved from 8 pounds at initial evaluation to 35 pounds at discharge. This result, compared to her dominant hand grip strength of 40 pounds reflected nearly complete restoration and was consistent with the expected 10% strength difference between dominant and non-dominant grip strength [22]. Lateral/key pinch strength increased from 4 pounds to 12 pounds, exceeding the pinch strength of her dominant hand.

Patient-reported outcomes measures, including the QuickDASH (Figure 2) and UEFI (Figure 3), both showed significant improvement. The changes in scores - 60 points for QuickDASH and 54 points for the UEFI - exceeded both the MDC and the MCID, indicating significant reductions in disability and restoration of functional ability. A complete summary of examination results across all assessment dates is provided in (Table 2).

Discussion

Trigger thumb injuries can impair hand and general function, creating difficulty with ADLs and IADLs [1]. While conservative management, such as corticosteroid injections and activity modifications, can resolve symptoms, it is reported that up to 60% of cases require surgical intervention for complete resolution of symptoms [24]. However, even after surgery, approximately 5% of patients experience pain, swelling, and stiffness [24], further impacting functional activities.

This case report illustrates the benefits of physical therapy that has a focus on work-simulated activities in an adult following trigger thumb release. The patient in this case study demonstrated marked improvement in active range of motion, grip and pinch strength, and overall functional ability within one month of beginning physical therapy, allowing her a quick return to full job duties.

Evidence indicates that post-op rehabilitation provides greater improvements in DASH scores, AROM, and pain symptoms when compared to simple instruction and unsupervised performance of an AROM HEP alone [24]. Furthermore, the inclusion of work-related activities into physical therapy can be an effective technique to improve return to work function [25]. By promoting activities that mimicked work duties, the patient's confidence (noted anecdotally) in her abilities improved in conjunction with functional strength gains. We hypothesize that the gains in strength, function, and confidence are reflected in the decreased perception of disability on the QuickDASH questionnaire and improvement in the UEFI from initial eval to discharge.

Limitations of this case report include the lack of studies directly investigating differences between treatment focusing on work-simulated activities and traditional strengthening and stretching interventions in post-operative hand rehabilitation. Most current research focuses on traditional therapy versus no therapy, and the impact on hand function. We acknowledge the existence of studies in the field of occupational therapy, particularly in the context of work-simulated activities and their impact on return-to-work status. Additional constraints in this case study included the delay between surgery and the initiation of physical therapy services, as well as the disruption of

services due to waiting for insurance authorization. While the patient demonstrated good recovery in five weeks, immediate post-operative therapy may have potentially yielded faster recovery and fewer tissue adhesions.

Conclusion

In conclusion, trigger thumb is a common condition impacting hand function. Physical therapy using work-simulation in addition to traditional therapeutic methods is a valuable approach. This case report provides an example of incorporating work-simulated activities to improve AROM, strength, and perceptions of functional ability to allow for a restoration of the patient's prior level of function and a quick return to her job duties.

Abbreviations: MCP: Metacarpophalangeal; Av: Annular variable pulley; ADLs: Activitities of Daily Living; MCID: Minimal Clinically Important Difference; AROM: Active Range of Motion; CMC: Carpometacarpal; IP: Interphalangeal; NPRS: Numerical Pain Rating Scale; QuickDASH: Quick Disability of Arm, Shoulder and Hand; MDC: Minimal Detectable Change; UEFI: Upper Extremity Functional Index; IADL: Instrumental Activities Of Daily Living; JRMC: Jamestown Regional Medical Center; ROM: Range Of Motion; HEP: Home Exercise Program; IE: Initial Evaluation; RE: Re-Evaluation; DC: Discharge; lbs: pounds; deg: degrees; cm: centimeters.

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Appendix 1: Trigger thumb post-op protocol

https://jrmcnd.com/wp-content/uploads/Trigger-Thumb-Post-Op-Guideline-082224.pdf

Accessed on March 7, 2025

Jamestown regional medical center

JRMC orthopedics

Trigger thumb post-op guideline [22]

This rehabilitation program is designed for use following trigger thumb release surgery. It is designed to progress the individual through rehab to activity participation taking into consideration specific patient needs and issues. Modifications to this guideline may be necessary dependent on physician specific instruction or other procedures performed. This evidence-based trigger thumb release guideline is criterion-based; time frames and visits in each phase will vary depending on many factors. The therapist may modify the program appropriately depending on the individual's goals for activity following trigger finger release.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

General guidelines/Precautions

The goal of the surgery is to enlarge the tendon sheath at its leading edge, which allows the tendon to again glide without locking or catching. A transverse incision is made along the A1 pulley at the MP joint flexion crease of the thumb. Once the tendon sheath has been enlarged, the patient is often asked to move their thumb to confirm that triggering no longer exists.

Considerations

- Recurrences of triggering are quite rare. Scar tissue formation can be a factor.
- Typically, patients do well on a home program with the guidelines provided within 1-3 visits.

Phase	Suggested Interventions	Goals/Milestones for Progression
Phase I Early Intervention	48-72 hours post-op: -Hand-based dressing is removed and a light dressing is applied. - Begin Home exercise program: Unrestricted AROM and PROM of thumb including: • Emphasis is placed on blocking the IP joint for isolated tendon gliding exercise to the flexor pollicis longus • 6x per day for 10 min sessions - Post-op edema management: with either light compressive dressing or an elastic stockinette to hand and forearm, digital finger socks or Coban are initiated. - Splinting is not initiated following a trigger thumb release. The rare indication would be related to significant pain or post-op edema. The splint is discontinued as soon as the pain and/or edema have begun to resolve.	Goals of Phase: Criteria to Advance to Next Phase: 1. Suture/wound remains closed and absent of infection 2. Improve motion 3. Pain is decreased 4. Locking or triggering of the digit is reduced 5. Swelling is managed
Phase II	10-14 days post-op: Continue to progress the AROM/PROM from phase I: • HEP 6x per day for 10 min sessions Within 48 hours following suture removal, scar mobilization techniques may be initiated with scar massage and lotion or cream, along with the use of Elastomer, silicone gel, Dycem. Manual desensitization techniques may be initiated. If scar tissue remains to be painful or a motion limitation, consider ultrasound as a modality.	Goals of Phase: Functional goals: 1. Begin light ADLs within the lift/carry/grasp restrictions 2. Knows conservative measures to address pain or edema with re-entry into activity (contrast bath, ice, heat, self- soft tissue mobilizations), joint protection, body mechanics, gripped tools or glove use, activity modification.

Phase III	3-4 weeks post-op: • Progressive strengthening: May be initiated with putty, foam ball, and/or some form of a hand exercises for grasp and pinch positions to regain the hand strength and endurance for functional hand use. Patient education with body mechanics, awareness to the activities that led to the trigger thumb. Continue scar mobilization and stretching as needed. Offer suggestions for modifying tasks or tools, rotate tasks to minimize repetition and options to alter the position of the thumb or decrease the resistance on the thumb.	Goals of Phase: Functional goals: 1. Return to light to moderate normal ADL demands, with improved motion, strength and pain levels 2. Integration of body mechanics and joint protection to the activities that may have contributed to the trigger thumb. 3. Avoid or minimize the activities that require repetitive gripping or demands of sustained pinch.