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Bankart Labral Repair Rehabilitation Using Fascial Counterstrain, Proprioceptive Neuromuscular Facilitation, and Range of Motion: A Case Report

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BANKART LABRAL REPAIR REHABILITATION USING FASCIAL COUNTERSTRAIN, PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION, AND RANGE OF MOTION: A CASE REPORT

by

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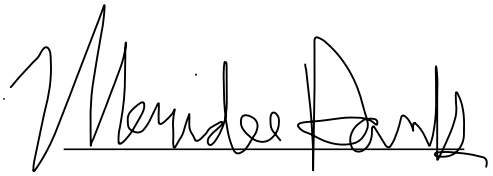
This Scholarly Project, submitted by Lauren McIntosh in partial fulfillment of the requirements for the Degree of Doctor of Physical Therapy from the University of North Dakota, has been read by the Advisor and Chairperson of Physical Therapy under whom the work has been done and is hereby approved.



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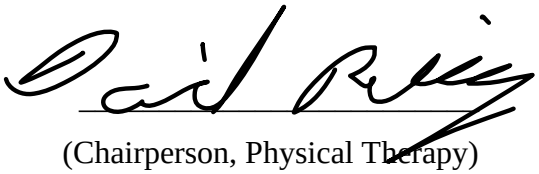

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ABSTRACT

Background and Purpose: This case study will address the use of fascial counterstrain, proprioceptive neuromuscular facilitation (PNF), and range of motion (ROM) to rehabilitate an arthroscopic anterior Bankart labrum repair in a pediatric patient. Bankart labral tears are defined as an anteroinferior tear of the labrum, frequently caused by multiple anterior shoulder dislocations. Fascial counterstrain can be used in post-surgical patients to reduce swelling, decrease healing time, and reduce pain. PNF and ROM allow the patient to return to a functional lifestyle and are included in most protocols provided by the surgeon. The purpose of this study is to demonstrate the benefits of combining traditional therapeutic treatment methods with fascial counterstrain to rehabilitate post-surgical patients.

Case Description: The patient was a 15-year-old male who presented post-surgically with low pain levels, no active range of motion, limited passive range of motion, strength limited by pain, and slight edema around the left shoulder.

Intervention: Treatment included strength progressions from isometric to isotonic motion, fascial counterstrain, passive range of motion, joint mobilizations, and neuromuscular re-ed using PNF patterns.

Outcomes: Following PT intervention, the patient achieved increased strength, improved range of motion, reduced pain, and improved posture.

Discussion: The patient's range of motion and strength were improved ahead of protocol with low to no pain throughout all rehabilitation. He progressed from no active motion to active shoulder flexion and abduction to 90 degrees with resistance to increase strength. The patient has improved his rounded shoulder posture with the reduction of tension in his anterior shoulder. By combining fascial counterstrain and traditional therapy methods, we were able to quickly progress the patient while reducing joint inflammation and pain.

Key Words: Bankart Labrum Repair, Athlete, Pediatrics, Fascial Counterstrain

CHAPTER I

BACKGROUND AND PURPOSE

Bankart labral tears often occur secondary to anterior shoulder dislocations. Anatomically it is described as a tear of the anteroinferior labrum from the 3-6 o'clock position.[1] Studies suggest that anterior dislocations leading to anteroinferior instability are common in young athletes.[1,2,3] Bankart tears can be diagnosed with a variety of assessments, including load and shift test, anterior shoulder apprehension test, x-ray, magnetic resonance imaging (MRI), and/or magnetic resonance arthrogram (MRA). Loh et al,[1] state that load and shift tests along with anterior shoulder apprehension tests are as reliable as MRI and MRA imaging in regard to Bankart tear diagnosis. See Figure 1 and Figure 2.

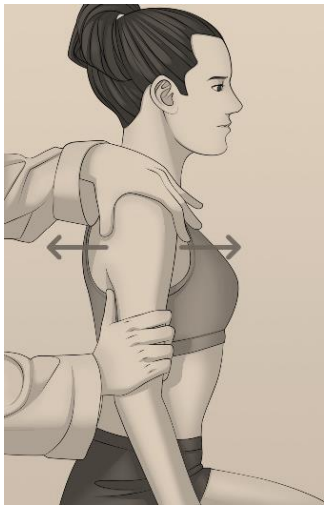


Figure 1. Load and shift test used to assess overall shoulder stability.

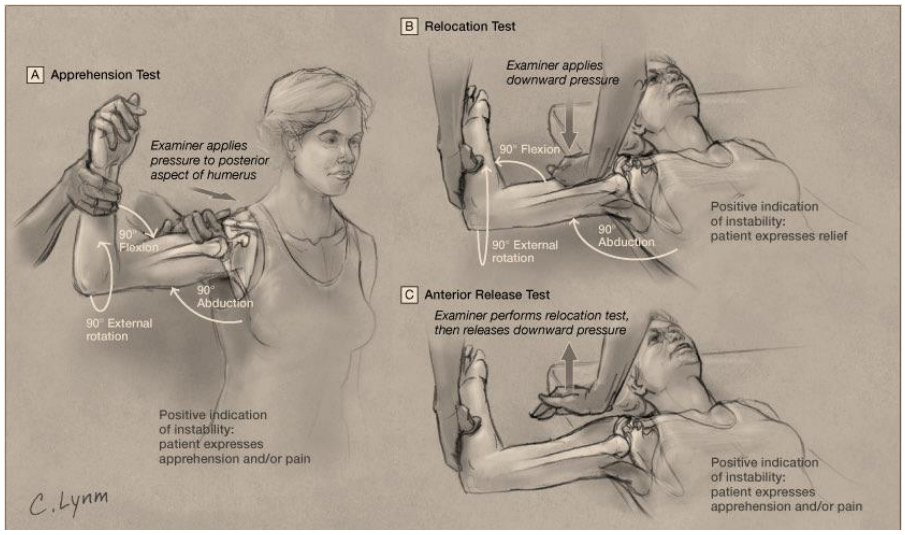


Figure 2. Anterior shoulder apprehension test used to assess anterior joint instability.

Following an accurate diagnosis, the orthopedic surgeon decides if a conservative or surgical approach will be taken. Multiple factors contribute to this decision, including first-time versus recurrent dislocations, severity of the tear, traumatic versus non-traumatic, and involvement of other structures[4,5]. More specifically, Marshall et al[4] suggest that surgery performed on patients with a first-time dislocation are more likely to have successful outcomes compared to patients with recurrent dislocations. Regardless, the patient will require some level of rehabilitation for surgical repair or conservative measures. The patient in this case chose to take surgical action following multiple dislocations.

The surgical procedure used was developed in the 1990s.[6] It consists of arthroscopically placing suture anchors to repair the anteroinferior labral tear known as the Bankart tear. There are higher rates of failure (4-18%) than the traditional method (0-5%) that uses osseous tunnels; however it has a much faster recovery time and damages less tissue.[6] Typically, rehabilitation protocols for Bankart repairs range from 12-15

weeks of therapy.[7] The time for rehabilitation can be dependent on what the patient wishes to return to, in this case the patient wanted to return to contact sports, therefore he stayed in physical therapy for 15 weeks.

Many athletes plan to return to their prior level of sport following surgery. There is strong evidence suggesting that most athletes can successfully return-to-sport with the use of post-surgical rehabilitation.[2,3,5,8-11] There are a variety of published protocols for rehabilitation, however this paper will focus on fascial counterstrain, proprioceptive neuromuscular facilitation (PNF) strengthening, and range of motion (ROM) interventions.

Fascial counterstrain was the first intervention introduced to the patient. Fascial counterstrain is currently taught as a branch of the original Jones Counterstrain and was developed in the late 1990s by Brian Tuckey.[12] Fascial counterstrain is built on the belief that fascia is a contractile tissue, the release of strain within the fascia allows for proper motion of the body systems, and proper motion of the systems can allow for reduction in pain and improved healing.[13] Tender points are a specific point that when lightly pressed elicits abnormal pain, based on identification of the tender point, the therapist applies pressure in a specific direction to release the strain of the fascia.

Along with fascial counterstrain, ROM was used to prevent the joint from locking up and further enhance the movement of fluids throughout the joint. Studies suggest that ROM is crucial to maintaining joint function.[14-16] Most protocols for Bankart labral repair rehabilitation had strict ROM guidelines that dictated patient progression. Exceeding these guidelines could over-stretch the healing tissue and cause the joint laxity following

all rehabilitation steps.[14-17] Progressing ROM too slowly can result in scarring down of tissue, causing long-term ROM limitations.

To encourage strength and return to prior level of function, PNF was used throughout rehabilitation. PNF exercises are proven to be highly effective in establishing shoulder stabilization and strength.[8] Being performed in the a more functional plane allows for proper shoulder movement and scapular traction. Comel et al[8] reports greater muscle recruitment with PNF ($p < 0.05$) compared to other strength exercises, and engagement of both agonist and antagonist muscles.

The purpose of this case study is to assess the effectiveness of fascial counterstrain, PNF, and ROM as a rehabilitation program for Bankart labral repairs. Combining these treatment methods consists of following the traditional post-surgical protocols that include ROM and PNFs while integrating fascial counterstrain into the first part of the rehabilitation period to increase the speed of healing and reduce the patient's pain.

CHAPTER II

CASE DESCRIPTION

The patient was a 15-year-old white male with a past medical history of three left shoulder anterior dislocations with variable reducibility. All shoulder dislocations were a result of contact injuries during football games. The last dislocation was near impossible to reduce in the emergency room, resulting in referral to an orthopedic surgeon. Imaging and testing lead to a diagnosis of a Bankart labral tear involving the left shoulder. Surgery was scheduled two weeks following his last dislocation to perform a routine Bankart labral repair. The patient returned home on the day of the surgery with instructions to rest, ice, compress, exercise his distal extremity, and protect the shoulder with a sling and abduction pillow. The patient was scheduled to attend physical therapy a week and a half after surgery, however, was diagnosed with influenza, resulting in the first visit being two weeks post operation. The patient clearly stated his goals of returning to his prior level of sporting activity.

The patient was 5'11'' and 132 lbs. according to previous medical records. Calculating out to a BMI of 18.4 placing him right at the line for being underweight.[18] The patient's past medical history included an ankle fracture requiring surgical intervention three years prior and three left shoulder dislocations within the last year. The first dislocation was easily reducible, the second was reducible by the athletic trainer, and the third dislocation was extremely difficult to reduce, leading him to choose surgical intervention. When asked about the fracture, the patient reports no complications. He

did not regularly take medications aside from the pain medications administered for post-surgical pain and occasionally ibuprofen for minor aches and pains.

The surgeon used a routine procedure for the repair, consisting of arthroscopic incisions and anchors along the torn labrum. Referral came directly from the surgeon with instruction to follow the provided protocol. All weight and ROM limitations were included in the protocol (Appendix 1). Two weeks post operation, the patient was initially evaluated by the outpatient physical therapist. Upon arrival, the patient was wearing a left arm sling with an abduction pillow and demonstrated orientation x4. Observation of the surgical site confirmed clean wounds and minimal edema. The patient reported use of a compression ice machine at least two times a day for the two weeks following surgery.

Following history and background information, the patient was deemed an appropriate candidate to receive physical therapy services. Further examination would be limited secondary to the ROM and weight precautions; however, it would involve ROM, strength, and neurological assessments. Results would then be used to ensure the appropriate plan of care was followed.

Examination

The patient independently ambulated to the private assessment room and was able to easily navigate obstacles and maintain balance. When asked about pain according to the 0-10 scale (0 = no pain and 10 = worst pain ever experienced), the patient rated his worst pain a 4/10 with movement and least pain a 0/10 while using the compression ice machine. The patient was transitioning from hydrocodone to ibuprofen for surgical pain. Prior to the initial evaluation, the patient completed a QuickDASH assessment (r=0.44

and MDC 11-17.18).[19] The QuickDASH consists of 11 questions used to assess disabilities of the arm, shoulder, and hand.[19] When asked to complete a QuickDASH assessment, the patient scored a 46%, translating to a 54% functional deficit. His parents and brother were able to compensate for his functional deficit by assisting him with his ADLs until he was able to return to full function.

Progression of goals and improvements in participation were monitored using the International Classification of Functioning (ICF) disablement model (Appendix 2). The model provides PT based diagnostic codes (Table 1) and uses intact patient language. The ICF allows to interpret the functional impairments and participation limitations that resulted from surgery and resolved throughout the rehabilitation process. By using participation limits, the patient's source of motivation for increased compliance was discovered. In this case, the patient was very motivated to return to sports and outdoor activities, which made it easy to encourage him to perform exercises.

The initial evaluation assessed ROM and sensation/neurological function. ROM measures can be found below in Table 2. The patient reports no sensation of tingling or shooting pain in the left upper extremity, and tests positive for all dermatome sensation. Initial evaluation was minimal secondary to pain tolerance and post-surgical precautions.

Following all examination and evaluation, the patient was deemed appropriate for physical therapy using the detailed protocol provided by the surgeon alongside the fascial counterstrain technique that the physical therapist was specialized in. It was hypothesized that this intervention strategy would allow the patient to meet his goals and return his prior level of activity.

Table 1. Coding through ICF Disablement Model

	ICF Codes	Implications with PT
Body Function	- b280.1 sensation of pain - b710.3 mobility of joint function - b730.3 muscle power function	- Begin PROM and progress to AROM - Strengthen shoulder - Reduce inflammation/pain
Body Structure	- s7201.372 joints of shoulder - s7202.302 muscle of shoulder - s7203.372 ligaments and fasciae of shoulder	- Strength and stretching to help muscles - Stretching and mobilizing to help ligaments and overall joint movement
Activities and Participation	- d4300.4 lifting - d4303.4 carrying on shoulders, hip and back - d5400.1 putting on clothes - d9201.4 sports - d9204.3 hobbies	- Will return to basketball practice and be able to snowmobile once strength and ROM are returned. - Will carry backpack on both shoulders - Will reduce difficulty with getting dressed.
Environmental Factors		**Personal Factors**
- e310+1 immediate family - e320+1 friends - e465.2 social norms, practices and ideologies - E2151.2+1 small community		- 15-year-old male - Athlete - Active outdoorsman - Motivated to return to sports

Table 2. Initial Exam Passive ROM, Functional ROM[20] and Normal ROM

	Left Shoulder (degrees)	Functional Measures (degrees)[20]	Normal ROM (degrees)
Flexion	90	121	180
Abduction	74	128	180
Internal Rotation	60	102 (arm at side)	70
External Rotation	12	59 (arm at 90 abd)	90

Evaluation, Diagnosis, and Prognosis

The initial evaluation presented a list of problems that would help focus the plan of care to rehabilitate the patient to his prior level of function. The most significant problem at this time was pain, closely followed by ROM. With pain limiting ROM, the

patient was at risk for long-term shoulder immobilization. Without the return of ROM, there would be severe functional deficits, and limitations during progression to proper strength. The next problem included left shoulder weakness. Surgical precautions suggested no active ROM for four weeks, and no weight-lifting for five weeks. Concerns immobility would cause increased weakness in the left arm compared to the right. During rehabilitation, the aim was to return the left upper extremity strength to that of the right. Below is a condensed problems list used for documentation purposes (Table 3).

Table 3. Problems List

Pain
Decreased left shoulder ROM
Decreased left upper extremity strength
Decreased left shoulder joint mobility
Surgical incision unhealed
Shortness of breath (result of influenza the previous week)

Upon initial evaluation, the short-term goals consisted of reducing pain, reaching and maintaining ROM goals according to the protocol, and transitioning to active assistive ROM using a cable weight machine to progress to strengthening so that the patient could independently dress himself, reach to the top of his locker, and carry his backpack on his shoulders. The long-term goals consisted of returning to previous ROM and strength to return to previous sports (basketball, baseball, and football), participate in physical education class at school, and return to previous hobbies of snowmobiling and snowboarding. The patient was expected to attend 15 weeks of physical therapy. He was scheduled to be seen two times a week (30-minute sessions) for the first five weeks to maintain ROM, he was scheduled to be seen one time (60-minute sessions) a week for the following 10 weeks.

The patient would continue with physical therapy following the detailed protocol provided by the surgeon alongside the fascial counterstrain technique that the physical therapist was specialized in. It was hypothesized that this intervention strategy would accomplish the patient's goals and return him to his prior level of activity.

CHAPTER III

INTERVENTION

The interventions were primarily based on the detailed protocol (Appendix 1) provided by the surgeon. The protocol focused on strength and ROM. Fascial counterstrain was also performed to improve the function of the joint, reduce pain, reduce inflammation, and increase range of motion. The combination of fascial counterstrain and traditional therapeutic activities allowed the patient to smoothly progress through the protocol with minimal pain.

During manual interventions and therapeutic exercises, thorough patient education was provided. Based on the patients age, ethical beliefs, and personality he was able to relate well with the therapist, which allowed him to receive the education well. However, his eagerness to return to sports and outdoor activities created a barrier to following the protocol restrictions. The majority of time spent educating focused on the importance of following restrictions for proper healing and full return to sports. The patient responded well to seeing the protocol so that he could strive for certain dates at which time restrictions would be lifted. A large amount of verbal education was also provided. The patient demonstrated understanding of the education via visual and vocal presentation methods by engaging in a comprehensive conversation during the education and demonstrating appropriate responses.

Initially, the patient was scheduled 2 days a week for 30-minute sessions to manage pain, maintain available range of motion, and reduce swelling. After five weeks of therapy, the patient was adjusted to 1 visit per week for 60 minutes to progress home exercises for increased strength and range of motion. Week one consisted of fascial counterstrain to the left anterior shoulder, left upper trapezius, left clavicle, left pectoral region, left axillary region, and left upper arm for reduced swelling and tightening of joint. Passive range of motion was performed to the left shoulder to stretch surrounding structures and maintain available range. Refer to Table 4 for progression of range of motion throughout the treatment sessions. The patient was instructed to continue the home exercise program provided at the evaluation with the addition of isometric shoulder exercises against a wall into abduction, adduction, extension, flexion, internal rotation, and external rotation to initiate strength training.

Week 2 treatment included fascial counterstrain to the left anterior shoulder, left posterior shoulder, left pectoral region, left axillary region, and left 4th rib to reduce swelling and rounded shoulder posture. Passive range of motion was performed to maintain available range and reduce the risk of frozen shoulder. He was instructed to continue with the home exercises provided at the last sessions.

The patient was able to begin active assistive range of motion starting at Week 3. His isometric strengthening was progressed to active assistive range with a 5lb counterweight using the pulley machine into flexion, abduction, and scaption. The shoulder trainer was used at the pulley machine to strengthen internal and external rotation with a 2.5lb weight. Fascial counterstrain and passive range of motion were continued for maintenance of mobility and reduced inflammation. He reported

discontinued use of the splint at night secondary to loss of sleep and was not demonstrating any new irritation caused by the change.

Week 4 focused on strength progression from isometric to active range of motion. Fascial counterstrain and passive range of motion were continued to maintain range of motion, stretch the joint, and warm-up the joint prior to exercise. Joint mobilizations were started for a more aggressive capsular stretch with the patient seated and the left arm resting in 90 degrees of abduction for better leverage to increase the intensity of the mobilization. The left shoulder joint was mobilized at a grade 2-3 inferiorly, anteriorly, and posteriorly. Active assistive range was performed with 2.5lbs counterweights on the pulley machine for all exercises described above. The patient progressed into active motion performing shoulder abduction without weight, and flexion with a 1lb dowel using the right arm for assistance if necessary. All exercises were performed with low repetitions and high sets to increase strength. The patient was able to reach level 5 three times on the finger ladder with emphasis on low compensation patterns. By the end of Week 4, the patient was no longer wearing his splint during the day and did not report any increased pain throughout the day without the immobilizing splint. He was instructed to continue with the current home program with plans to progress exercises at the next session.

Treatment during Week 5 included continued fascial counterstrain, passive range of motion, and joint mobilizations to the left shoulder to progress available range of motion and reduce joint inflammation. The patient reported increased pain along his superior scapular spine, that was released using fascial counterstrain prior to exercises. Strength training was continued with active shoulder flexion and abduction with a 2lb

dowel, internal and external rotation of the shoulder with 2.5lb weights on the pulley machine, level 4 on the finger ladder, and PNF patterns using the pulley machine. PNF patterns used 2.5lbs of resistance for D1 and D2 extension and 5lbs of resistance for D1 and D2 flexion. The patient was provided a new home program to progress strength with isotonic shoulder flexion and abduction using a 2.5lb weight for resistance and PNF patterns with a red band for resistance. After attending a follow-up appointment with his surgeon, he was cleared to condition with the basketball team during practices while still avoiding contact drills or scrimmages.

Week six consisted of progressing the patient to higher weight for strength training. We continued to start the appointment with counterstrain, passive range of motion, and joint mobilizations. PNF exercises at the pulley machine were progressed to 5lbs for D1 and D2 extension patterns, and 10lbs were used for D1 and D2 flexion patterns. The patient trialed pulleys without resistance to be used as a shoulder flexion and abduction stretch, but he was unable to feel a stretch. His home program was progressed to include 5lb weights for shoulder flexion and abduction, strengthening internal and external rotation with a red band for resistance, and using a dowel to stretch his internal rotation behind his back. The patient reports participation in all basketball activities that are non-contact including dribbling, shooting, and conditioning. He was educated on the limitations that may be present and the risk of reinjury if he does not follow the doctor's orders of only conditioning.

For Weeks 7 to 15, counterstrain and passive ROM were discontinued, as the patient had progressed enough that the treatments were no longer necessary, and it was important for him to progress to independent interventions. Instead, the patient began

warming up on the arm bike prior to starting his therapy session. The weeks continued to increase strengthening according to the protocol using free weights, cable machines, and medicine balls. PNF exercises continued throughout the strengthening process to improve strength within the most functional plane of motion. He continued to reintroduce himself into sports with slow progression into contact drills at basketball practice and weightlifting with the team.

CHAPTER IV

OUTCOMES

The outcomes for the patient were excellent, he was able to fully return to sports at his pre-injury level without concern of dislocating his left shoulder following surgical intervention and fifteen weeks of rehabilitation. Progress was measured using goals, pain scales, functional scales, and subjective patient judgement. Based on all three measures, the patient had a successful post-operative rehabilitation.

The patient's ROM returned to full range without having the pre-surgical hypermobility. Table 4 demonstrates the patient's return to full ROM from Week 1 to Week 6. He progressed from only PROM, to AAROM starting with 5lbs of assistance from the cable machine, to AROM with resistance (progressing from cable machines to free weights). The QuickDASH progressed from 54% functional deficit to 0% deficit. Lastly, upon evaluation the patient rated a 4/10 pain rating (0 being no pain, 10 being worst pain ever) and ended therapy at a 0/10. ROM, pain scales, and the QuickDASH functional scale provide objective data demonstrating progression of shoulder function related to the therapeutic intervention.

Patient goals and judgement were subjective measures used to define success as well, as it is important to put the patient first. Based on the initial evaluation and discussion throughout the sessions, the patient's goal was to return to sports and outdoor activities. Not only were the patient's goals met, but he consistently met all goals set within documentation for short-term progression and long-term success.

Table 4. Passive ROM progression (in Degrees)

	Left Shoulder Flexion	Left Shoulder Abduction	Left Shoulder Internal Rotation	Left Shoulder External Rotation
Initial Eval	90	74	60	12
Week 1	124	90	47	41
Week 2	135	90	-	-
Week 3	160	90	-	-
Week 4	-	-	-	-
Week 5	-	-	-	-
Week 6	162	-	65	77

All exercises were tolerated well throughout the sessions. In fact, one of the challenges was encouraging the patient to follow precautions, as he was ready to return to his normal activities. Compliance during therapy sessions and with home exercises programs was very good during the beginning of rehab because the patient would perform them during sports practices and PE class since he could not participate in the group activities. As participation increased, home exercise compliance decreased, but he was continuing to strengthen his left shoulder by participating in practices and PE class. The patient and his family were very satisfied with all care provided and the results of the rehabilitation protocol followed.

CHAPTER V

DISCUSSION/CONCLUSION

The patient was referred to physical therapy post-surgically with a Bankart labrum repair two weeks prior to his initial evaluation. He arrived with limited passive range of motion, low strength limited by pain, moderate edema around the surgical area, and no active range of motion due to surgical restrictions. Physical therapy treatment followed the protocol provided by the surgeon for strength through PNF exercises, range of motion restrictions, and progressions with the addition of fascial counterstrain for pain management, reduction of inflammation, and improved joint mobility.

Following therapeutic intervention, the patient achieved full ROM, strength, and function in the involved limb. He accomplished his long-term goal by returning to his prior level of sport participation. Challenges that presented included patient compliance with following restrictions with post-surgical ROM and lifting limitations. Prior to clearance, he participated in hockey, removed his sling and abduction pillow, and performed ROM outside of the restricted range. Through ice, compression, and fascial counterstrain, we were able to reduce the inflammation caused by overuse of the injured extremity.

Limitations of this study include the lack of consistency with which joint range of motion was acquired and poor numeric data to demonstrate the benefits of counterstrain. Future studies could compare patients treated with fascial counterstrain and traditional methods to patients only treated with the traditional protocol methods.

Future investigations to improve data could include collection data on fascial counterstrain used with different surgical procedures, use of the Kerlan-Jobe Orthopaedic Clinic Score Questionnaire (KJOC)[21, 22, 23], which is a functional questionnaire focused on athletic performance, symptoms, and interpersonal relationships associated with performance using 10cm visual analog scales. This study demonstrates one patient who progressed ahead of the provided protocol through the use of traditional treatment supplemented with research based fascial counterstrain. Suggesting that the therapeutic intervention was effective through the eyes of the patient, family, and therapist. Further research must be performed to demonstrate numeric benefits of fascial counterstrain for possible inclusion of fascial counterstrain in future post-surgical protocols.

REFLECTIVE PRACTICE

Regardless of the success of the rehabilitation program, there are multiple areas for improvement. First and foremost, the majority of the treatment sessions and plans were guided by a student physical therapist with little experience. I was being overlooked by a licensed PT, however there is a chance I could have missed some assessments or performed treatment incorrectly. Even correct performance was completed less efficiently than an experienced therapist and took more time. However, the patient, therapist, and patient's family were satisfied with the services provided and the goals met.

As mentioned above, I think that the KJOC would have been a better functional assessment than the QuickDASH based on the athletic implication. The goals for our patient were to return to his active lifestyle, including four-wheeling, football, basketball, baseball, and snowmobiling. All of those activities expand beyond the level of the

QuickDASH assessment and the KJOC would have included them. The clinic used the QuickDASH for all shoulder patients, and this case made me realize the importance in choosing the appropriate functional assessment for each individual.

Lastly, our patient was progressing ahead of the protocol throughout the entire rehabilitation. This was partially due to his lack of compliance with surgical restrictions, and I also believe it was in part due to the use of fascial counterstrain to accelerate the healing process. We continued to follow the restrictions of the protocol, however in hindsight we should have contacted the surgeon and asked his opinion in progressing faster. If cleared by the physician, there is a chance that the patient could have met his goals faster. Not only would reaching his goals faster be beneficial to the patient for return to full function, but it would have reduced the cost of his rehabilitation treatment.

In conclusion, the patient completed the rehabilitation with all goals met, and fully returned to his prior level of function. His return to all activities demonstrates the success of the protocol used alongside fascial counterstrain.

Appendix 1[24]

Bankart and SLAP Repair Post Operative PT Protocol
Revised January 2009

Please note that the surgical team may adjust any of these protocols as necessary for each individual patient. The following are guidelines only and physical therapists should contact us if they have any questions they may have regarding our protocol and our patient needs, limitations and expectations.

The UWMC Shoulder and Elbow Team can be reached at the Bone and Joint Center at 206 598-4288.

Post-op Days 1-3

Directions for Patient:

Sling x 4 weeks while sleeping and walking
Place pillow behind arm while sleeping for comfort, as needed
No lifting of anything heavier than a cup of coffee

Directions for Physical Therapist:

Hand squeezing exercises
Elbow and wrist AROM with shoulder in neutral position at side
Supported pendulum exercise in sling or on ball (trunk driven)
Scapular retraction without resistance
Sternal lift (in sling)
Ice pack – educate pt on use
Elbow in back pocket (in sling) – educate pt on use

Goals:

Pain control
Protection

Post-op Days 4-14

Directions for Patient:

Continue sling x 4 weeks after surgery while sleeping and walking

Directions for Physical Therapist:

Continue appropriate previous exercises
AAROM supine

- Forward elevation to 90 degrees
- External rotation to within 25% of opposite shoulder with wand

1-2 finger isometrics x 6 (fist in a box)
No Active or Resisted Internal Rotation if Open Bankart
Resisted wrist exercises (light dumbbell)
Stationary bike (must wear sling) – educate pt as needed
Walking, as tolerated (in sling) – educate pt as needed

Goals:

AAROM flexion to 90 degrees

Please contact the UWMC Shoulder and Elbow Team with any questions. 206 598-4288

Weeks 3 and 4 after Surgery

Directions for Patient:

Continue sling x 4 weeks after surgery while sleeping and walking
No lifting of anything heavier than a cup of coffee (8 ounces)

Directions for Physical Therapist:

Continue appropriate previous exercises
AAROM supine
Forward elevation to 120 degrees
External rotation to within 33% of opposite shoulder

Goals:

AAROM forward elevation to 120 degrees

Weeks 5 and 6 after Surgery

Directions for Patient:

Discontinue sling at 4 weeks unless patient is hyperlax
No lifting of anything heavier than a gallon of milk (8 pounds)

Directions for Physical Therapist:

Scapular clock
Low rows (elbow in the back pocket)
AAROM (supine, wand, pulley, table slides)

- Forward elevation to > 120 degrees as tolerated
- Abduction
- External rotation (supine or standing with wand) within 50% of opposite shoulder
- Internal rotation as tolerated (up the back) - **Not if Open Bankart repair**

Push-up plus against wall – No elbow flexion > 90 degrees
Prone scapular retraction exercises (without weights)
Treadmill - walking progression program – educate pt as needed

Goals:

AAROM Forward elevation > 120 degrees
No scapular dyskinesis

Weeks 7-9 after Surgery

Directions for Patient:

Avoid heavy pushing, pulling or lifting

Directions for Physical Therapist:

Continue appropriate previous exercises
AAROM (pulley, doorway stretches) through full range
AROM through full range as tolerated
Rotator cuff strengthening with light tubing/Theraband

- external and internal rotators with arm at side and pillow or towel roll under arm
- forward elevation to 60 degrees
- abduction to 60 degrees
- scaption to 60 degrees
- extension to 30 degrees

Standing rows with tubing/Theraband
Resisted elbow curls
Ball on wall (arcs, alphabet)
BAPS on hands
Push-up progress: wall to table (no elbow flexion > 90 degrees)
Body blade in scaption
Upper Body Ergometer (UBE) forward and backward at low resistance
Elliptical trainer (without arms) – educate pt as needed
Stairmaster – educate pt as needed
Pool walking/running – No UE resistive exercises – educate pt as needed

Goals:

Near full AROM
30 wall push-ups

Weeks 9-12 after Surgery

Directions for Patient:

Avoid heavy pushing, pulling or lifting

Directions for Physical Therapist:

Continue appropriate previous exercise with increased resistance as tolerated
PROM/mobilization as needed to gradually regain full ROM by 12 weeks
Push-up progress – Table to bench (no elbow flexion > 90 degrees)
Ball toss with arm at side using light ball
Treadmill – running progression program – educate pt as needed
Pool walking/running with UE resistance (non swimming) – educate pt as needed

Goals:

Normal rotator cuff strength
Full AROM

Weeks 13-16 after Surgery

Directions for Patient and Physical Therapy:

Avoid heavy pushing, pulling or lifting
Continue appropriate previous exercises
Fitter on hands
Ball toss overhead
Push-ups, regular – no elbow flexion > 90 degrees
Weight training with light resistance

- no overhead press or pull downs behind head
- no elbow flexion > 90 degrees with bench, dips, etc.

Pool therapy – educate pt as needed

Goals:

Full AROM
30 regular push-ups

Months 4-6 after Surgery

Directions for Patient and Physical Therapy:

No contact sports until 6 months after surgery
Continue appropriate previous exercises
Push-ups – no elbow flexion > 90 degrees
Sit-ups
Progressive weight training

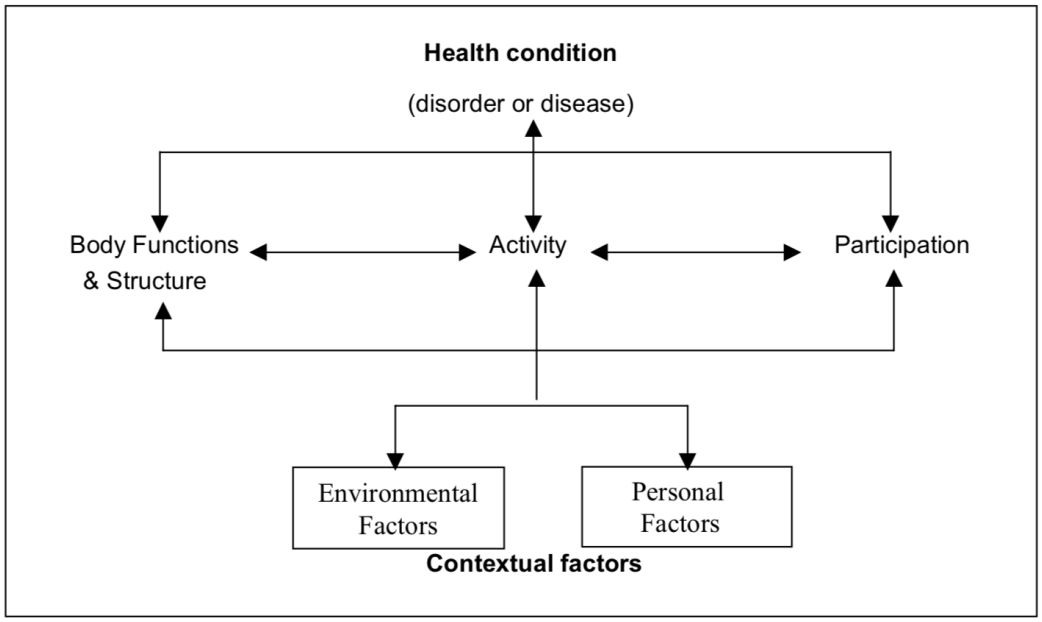
- no elbow flexion > 90 degrees with bench, dips, etc.

Transition to home/gym program – educate pt
Swimming – educate pt as needed
Running progression to track – educate pt as needed

Goals:

Resume all activities

Appendix 2[25]



Body Functions are physiological functions of body systems (including psychological functions).

Body Structures are anatomical parts of the body such as organs, limbs and their components.

Impairments are problems in body function or structure such as a significant deviation or loss.

Activity is the execution of a task or action by an individual.

Participation is involvement in a life situation.

Activity Limitations are difficulties an individual may have in executing activities.

Participation Restrictions are problems an individual may experience in involvement in life situations.

Environmental Factors make up the physical, socal and attitudinal environment in which people live and conduct their lives..

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