

12-2018

# Conservative Management Of A Complete Rupture Of The Long Head Of The Biceps: A Case Report

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## Recommended Citation

Woller, Ali, "Conservative Management Of A Complete Rupture Of The Long Head Of The Biceps: A Case Report" (2018). *Case Report Papers*. 94.  
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1 **Conservative Management of a Complete Rupture of the Long Head of the Biceps: A Case**  
2 **Report.**

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The patient signed an informed consent allowing the use of medical information and video

12

footage for this report and received information on the institution's policies regarding the

13

Health Insurance Portability and Accountability Act.

14

15

The author acknowledges Matt Somma, PT, MTC, DPT, CSCS for assistance with case

16

report conceptualization and Jop Blom, PT, PhD for supervision and assistance with patient

17

management.

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Key Words: biceps, rupture, conservative management

19        **ABSTRACT**

20        Background/Purpose: The long head of the biceps plays an important role stabilizing the  
21        shoulder. Most of the current literature supports surgical intervention following a complete  
22        rupture, but there is little evidence that supports conservative management. Due to a lack of  
23        evidence supporting conservative management of a complete rupture of the long head of the  
24        biceps, the purpose of this case study was to evaluate the progress this patient made over a  
25        six-week period with outpatient physical therapy addressing his impairments resulting from  
26        his injury. Case Description: The patient was a 51-year-old male with a confirmed diagnosis  
27        of a complete rupture of the long head of his biceps. The initial evaluation took place two  
28        and a half months after the accident due to a delay in seeking medical attention. He had a  
29        decreased ROM and strength, increased pain levels that effected his work, and an impaired  
30        QuickDASH score. Outcomes: After six weeks of conservative treatment, the patient had an  
31        increase in ROM, improved QuickDASH score, and reported a decrease in pain and increase  
32        in work capacity. Discussion: Despite the long duration between onset of injury and physical  
33        therapy, the patient appeared to benefit from conservative management based on objective  
34        findings and patient reported results.

35

36        **INTRODUCTION/BACKGROUND and PURPOSE**

37        The long head of the biceps plays an important role in stabilizing the shoulder.<sup>1</sup>  
38        According to one study conducted on cadavers, it was concluded the long head of biceps  
39        significantly reduced anteroposterior and superiorinferior translation of the humeral head in the  
40        glenoid fossa.<sup>2</sup> A tear of the long head of the biceps most commonly occurs when the biceps is  
41        suddenly loaded against flexion and supination of the elbow.<sup>3</sup> When an individual tears the long

42 head of the biceps it is often a challenging decision whether they should chose surgical repair or  
43 conservative management.

44 A study that evaluated individuals who initially chose conservative management, showed  
45 55.7% of the individuals who utilize conservative methods ultimately chose surgery. The study  
46 demonstrated that individuals with high demand jobs were significantly more satisfied with  
47 surgery over non-operative treatment. However, the study found there was no statistically  
48 significant difference between surgery and non-operative treatment in those with low demand  
49 jobs.<sup>4</sup> Another study reviewed the satisfaction of surgical biceps rupture repair in 19 studies with  
50 a total of 86 individuals who underwent the surgery. The surgery resulted in a 94% satisfactory  
51 on outcome measure, but surgical complications of the following were found; “lateral  
52 antebrachial cutaneous nerve paresthesia (17%), posterior interosseous nerve palsy (6%), elbow  
53 discomfort (2%), surgical revision (2%), and asymptomatic heterotopic ossification (1%).”<sup>5</sup>  
54 Lastly, a case study followed a soldier who chose conservative management of a complete tear of  
55 the short head of his biceps. Following conservative management, the soldier demonstrated full  
56 range of motion (ROM) and manual muscle test all within normal limits, and reported a 0%  
57 score on the QuickDASH.<sup>6</sup> His only deficit noted was a 39.1% decrease in peak torque for  
58 elbow flexion and 36.3% decrease in peak torque for elbow extension.<sup>6</sup>

59 Ultimately, making the decision to choose surgery or conservative management can be  
60 very difficult for patients and is debated in the literature. There was limited research on  
61 individuals who chose conservative management compared to surgical repair. The purpose of  
62 this case study was to evaluate the progress this patient made over a six-week period with  
63 conservative management for a complete rupture of the long head of the biceps. The patient was  
64 also unique due to the amount of time between when the injury occurred and when he sought  
65 treatment, two and a half months later.

66

67 **Patient History and Systems Review**

68           The patient provided consent to participate. The patient was a 51-year-old male who  
69 presented to therapy with a complete tear of the long head of his biceps. He worked a high  
70 physically demanding job as an electrician, which required heavy lifting, overhead work, and  
71 was relatively strenuous. He had a supportive wife and two children who were grown and  
72 moved out.

73           He was digging his work truck out when he stepped back into a pile of snow. His truck  
74 window was open and as he sunk into the snow, his initial reaction was to grab ahold of the truck  
75 door through the window to break his fall. He immediately heard a pop in his shoulder and felt a  
76 sharp pain. When he eventually went to his PCP, an MRI was ordered which showed a complete  
77 tear of his long head of the biceps. He discussed the possibility of surgery, but due to the  
78 minimal physical restriction he experienced and the chronic nature of the tear, the surgeon  
79 recommended trying physical therapy (PT). The patient also did not want to take the extended  
80 period off work for rehabilitation.

81           The patient's PT evaluation occurred two and a half months after initial injury. His main  
82 concern was being able to perform his job. While he was able to perform all activities, he was  
83 concerned about the pain and the lack of ROM. His pain was primarily located in his right  
84 superior/lateral shoulder, with some pain in right scapula, and tightness inferior to shoulder while  
85 reaching overhead. He described the pain as a dull ache with intermittent pulsating pain. His  
86 other main concern was avoiding surgery. He did not want surgery due to the lengthy recovery  
87 and the amount of work he would miss. Secondly, there was a reduced guarantee that surgery  
88 would be successful since there was a span of two and a half months since the initial injury.

89           The patient's past medical history included diabetes and hypertension, which were under  
90 control without medication at the time of the initial evaluation (IE). Other than an MRI of his  
91 shoulder, which revealed a full tear, and discussing surgery with the surgeon, he had not had any  
92 other professional interventions performed on his shoulder. He had found pain relief with  
93 NSAIDs that he takes daily to control pain. See Table 1 for the patient's system review.

94           The patient was hopeful conservative treatment would be successful. His goals for PT  
95 included decreasing his pain, restoring ROM, and avoiding surgery.

#### 96 **Examination – Tests and Measures**

97           The following tests and measures in Table 2 were administered to the patient during the  
98 IE after a thorough patient history was obtained.

#### 99 **Goniometry**

100           To determine the ROM restriction the patient was experiencing, goniometry allowed us  
101 to measure his available active and passive ROM for his right shoulder and right elbow. The  
102 patient was seated on the edge of the plinth while these measurements were taken. Goniometry  
103 is highly reliable when measurements are taken by the same therapist, however interrater  
104 reliability is specific to the shoulder motion being measured.<sup>7</sup>

#### 105 **Manual Muscle Testing**

106           Manual muscle testing (MMT) was used to assess if any strength deficits were present.  
107 Shoulder flexion, abduction, extension, internal and external rotation and elbow flexion and  
108 extension were all tested. The patient was again seated on the edge of the plinth with these  
109 measurements were taken. One literature review that analyzed over 100 studies determined that  
110 there is evidence for good reliability and validity of MMT.<sup>8</sup> This study also determined that  
111 there is good external and internal validity and the MMT scores were not dependent upon  
112 examiner bias.<sup>8</sup>

113 **Palpation**

114 Palpation was used to determine if any trigger point or localized myofascial pain was  
115 present. The features of a trigger point include referred pain sensation, a positive jump sign,  
116 finding a nodule in taut band, and eliciting a local twitch.<sup>9</sup> The last two characteristics are the  
117 most reliable making palpation for trigger points a reliable method to diagnosis myofascial pain.<sup>9</sup>  
118 The patient had multiple trigger points found in the right shoulder region.

119 **QuickDASH**

120 The QuickDASH outcome measure was used to determine what activities the patient  
121 found limiting outside the clinic.<sup>10</sup> The QuickDASH is reliable and a quicker substitution  
122 compared to the full DASH.<sup>10</sup>

123 **Visual Analog Scale**

124 To determine the severity of the patient's pain, he was asked to rate his pain levels on a  
125 scale of 0-10, with 0 being no pain and 10 being the worst pain imaginable. This is a commonly  
126 used method with in facilities that allow patients to quantify their pain levels.

127  
128

129 **Clinical Impression 2: Evaluation, Diagnosis, Prognosis**

130  
131 This patient continued to be appropriate for this case report based on his positive attitude,  
132 willingness to comply with home exercise program on a consistent basis, and nature of his case,  
133 particularly the duration of time that passed between initial injury and beginning of PT.  
134 According to the surgeon, surgery would have been much more difficult due to possible  
135 retraction of the muscle and the potential for the muscle's inability to stretch due to the span of  
136 time since the initial onset of injury. The duration also caused this to be treated as a chronic  
137 injury (over 4 weeks) compared to an acute injury.  
138

139           The PT plan for this patient was for him to be seen once a week, for 6 weeks. After six  
140 weeks, he had a follow up appointment with his surgeon to determine if he was satisfied with the  
141 progress he had seen in PT or if he would like to further investigate the option of surgery. His  
142 medical diagnosis was ICD-10 code was S46.12, laceration of musc/fasc/tendon long head of  
143 biceps. His PT ICD-10 code was M25.511, pain in right shoulder.

144           Prognosis expected for this patient was an improvement in ROM in his right shoulder and  
145 decrease in pain levels over six weeks allowing him to perform all work-related tasks. It was  
146 explained that physical therapy would not structurally fix the shoulder but it would address his  
147 ability to compensate for the loss of the long head of the biceps and improve ROM and pain.

148           One case report followed a patient who chose conservative management of a complete  
149 tear of his biceps brachii muscle and a partial tear of the coracobrachialis muscle.<sup>11</sup> At a six  
150 month follow up the patient report no functional limitations or pain with work related activities  
151 or leisure activates.<sup>11</sup> In addition, he scored a 0% on the QuickDASH.<sup>11</sup> Based on  
152 improvements seen in this particular case report, it was anticipated that the patient would be able  
153 to regain full range of motion and have significant pain reduction during his work-related  
154 activities.

155           To evaluate the effectiveness of manual therapy and therapeutic exercises ROM was re-  
156 evaluated at the beginning and end of every session to document progress. In addition, the  
157 patient's pain levels were recorded at the beginning of every session to determine how the  
158 patient progressed week to week. The QuickDASH was administered at initial evaluation and  
159 then again at six weeks. Interventions included: muscle energy technique to improve range of  
160 motion, soft tissue mobilization to address trigger points and tenderness in myofascial, and  
161 therapeutic exercise to maintain range of motion and strength outside the clinic. These

162 interventions were chosen because they addressed limitations found in the initial examination  
163 that PT could treat.

164 Two short term goals and three long term goals were assigned to the patient (Table 3).

### 165 **Coordination, Communication, and Documentation**

166 The results of initial examination, plan of care, and home exercise program were  
167 discussed with the patient. The physical therapist (PT) and the student therapist communicated to  
168 optimize treatment plan. The initial evaluation and progress notes were done using an electric  
169 medical record system. The initial evaluation and discharge note were faxed to the referring  
170 physician.

### 171 **Patient Instructions**

172 The patient was informed on the importance to PT and benefits it could provide.  
173 Following the initial evaluation, the patient was prescribed a home exercise program. The  
174 importance of being compliant with the home exercise program in order to meet goals was  
175 explained to the patient. The patient was also informed to modify painful activities after the  
176 initial evaluation.

### 177 **Procedural Interventions**

178 Muscle energy technique (MET) was used as an alternative to passive stretch. With MET, the  
179 patient meets the therapists force to generate a gentle isometric contraction and then relaxes as the  
180 therapist applies force in the direction of the desired stretch. This technique uses autogenic or reciprocal  
181 inhibition to achieve lengthening of the desired muscle.<sup>12</sup> MET was performed during the first visit to  
182 increase the patient's internal rotation (IR). Isometric contractions were utilized in the direction of  
183 external rotation and for a duration of five seconds. One study by Fryer, supports the use of five second  
184 isometric contraction over 20 seconds when using MET. The study demonstrated a greater increase in  
185 ROM with the shorter duration of isometric contractions.<sup>13</sup>

186 Soft tissue manipulation of the trigger points was completed to the tender areas found in the  
187 patient's right shoulder region. The patient had tender areas found in the right infraspinatus, rhomboids,  
188 and deltoid insertion. Once found, a direct, constant pressure was applied to the most tender spot in the  
189 region. The patient was instructed to relax and inform the PT when the pain levels subsided  
190 approximately 50%. This was repeated to all the tender areas found. One study by Sohns et al showed  
191 significantly more improvement with manual trigger point therapy compared to a manual sham therapy in  
192 improvements of pressure pain thresholds.<sup>14</sup>

193 The patient performed an IR stretch to increase range of motion. The patient was instructed to  
194 hold a towel with the affected arm. The patient then reached his unaffected arm behind his back and  
195 picked up the opposite end of the towel. The unaffected arm slowly pulled the towel, parallel to the  
196 ground, across the back providing an IR stretch to the affected arm. The patient was instructed to bring  
197 the affected arm to where he felt a stretch, but no pain. He then held this position for 15 seconds, relaxed,  
198 and repeated three more times.

199 Lastly, the patient was provided a posterior capsule stretch. The patient was instructed to bring  
200 his affected arm across the front of his body and reach towards his opposite shoulder blade. Then with the  
201 unaffected arm, he applied an overpressure through his elbow in the direction he was already reaching.  
202 He applied pressure until he felt a stretch, but no pain. He held this for 15 seconds, relaxed, and then  
203 repeated for a total of three times.

204 During the second session, sleeper stretch against a wall was added to increase right shoulder IR  
205 by stretching the posterior capsule. The patient was instructed to stand with his back against a wall, right  
206 shoulder abducted to 90 degrees and elbow flexed to 90 degrees. He then applied a downward pressure  
207 with his left hand onto his right wrist into the direction of IIR. He was instructed to hold the stretch for  
208 15 seconds, relax and repeat for a total of three repetitions.

209 During the third session, sleeper stretch was progressed by positioning the patient in side lying.  
210 The patient was instructed to lay on his right side with his arm forward flexed to 90 degrees and elbow  
211 flexed to 90 degrees. Verbal and tactile cues were given to the patient in order to maintain his shoulders

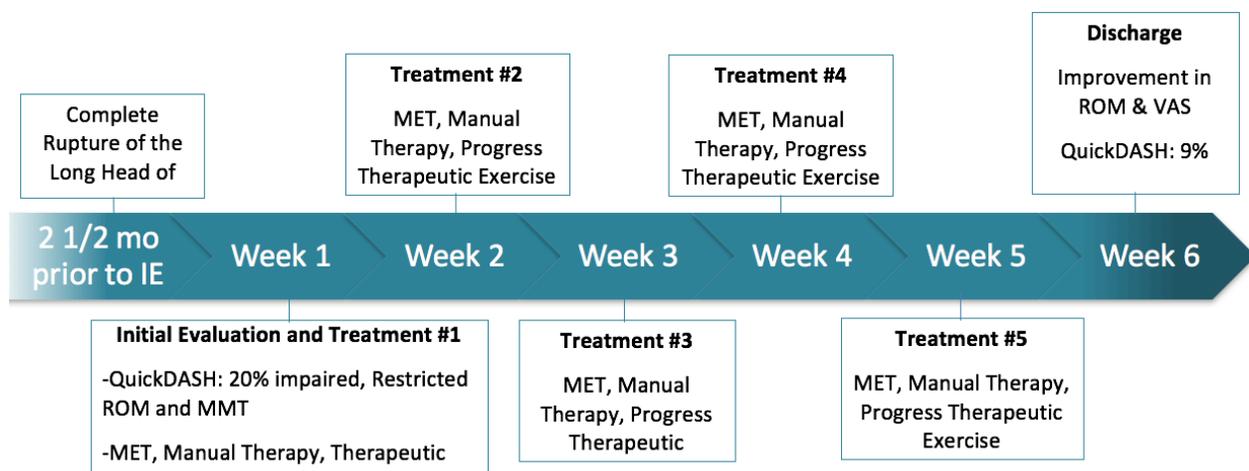
212 stacked on top of each other. The patient was then instructed to push his right wrist with his left hand in  
213 the direction of shoulder IR. He was instructed to hold the stretch for 15 seconds, relax and repeat for a  
214 total of three repetitions. Chepeha et al studied the impact of the sleeper stretch on college level overhead  
215 athletes who had >15 degrees deficit of IR. After eight weeks, the study showed significant increase in  
216 IR.<sup>15</sup>

217 During the third session, scapular retraction exercise was given to strengthen the patient's  
218 scapular retractors and aid in improving posture and scapular position. The patient was instructed to  
219 stand holding an orange resistance band (REP Band, Chattanooga, TN) in his hands, palms up. Elbows  
220 were flexed to 90 degrees and arms were shoulder width apart with just enough tension on the resistance  
221 band so there was no slack. He was then instructed to externally rotate both shoulders and "squeeze" his  
222 shoulder blades together, hold for three seconds then relax. He was instructed to repeat this ten times and  
223 complete a total of three sets. Scapular strengthening exercises were given to provide a stable base for  
224 optimal muscle activation which is crucial for proper shoulder function.<sup>16</sup>

225 A table depicting the treatment plan session to session can be found below (Table 4). The patient  
226 was compliant with therapy and his home exercise program. He arrived to all of his appointments on time  
227 and reported compliance with home exercise program two times a day.

228

## 229 **TIMELINE**



232 **OUTCOMES**

233 On his final visit, the patient demonstrated improvements that included decreased tenderness  
234 in R infraspinatus, increased AROM and increased PROM compared to IE (Table 2). His  
235 AROM for forward flexion increased from 153 degrees to 168 degrees and his AROM for IR  
236 increased from 38 degrees to 51 degrees. Self-reported improvements from the patient included  
237 decreased pain with shoulder movements, improved working capacity, and improved  
238 QuickDASH score compared to IE (Table 2). His QuickDASH score decreased from 20 (20%  
239 impaired) to nine (9% impaired) and his VAS decreased from 7/10 to 2/10 after a day at work.  
240 The patient appeared compliant with home exercise program (HEP) and reported completing all  
241 exercises given to him. Ultimately, he felt his PT plan was successful and he was able to  
242 continue his work as an electrician with a decrease in pain and increase in ease. The patient  
243 experienced no adverse or unanticipated events throughout the course of treatment.

244

245 **DISCUSSION**

246 This case demonstrated its intended purpose by following the conservative management  
247 of a complete rupture of the long head of the biceps two and a half months after the injury. This  
248 case report enhances the literature on this topic because there has previously been a focus on  
249 surgical intervention and not on conservative management. Despite the patient not having met  
250 the minimal clinically important difference (MCID) on the QuickDASH, (15.91 point change  
251 required),<sup>17</sup> he self-reported a decrease in his pain levels on the VAS after work and reported an  
252 increase in his functional work capacity due to the decrease in pain. The findings from this case  
253 report coincide with the findings in the literature including improvements in QuickDASH score  
254 and improvement in work capacity.<sup>11</sup>

255           One strength of this case report was the patient’s compliance with his HEP and  
256 attendance to PT. His enthusiastic attitude and determination to see improvements was favorable  
257 and allowed for more manual work in the clinic since he was consistent with HEP. One  
258 limitation was that this case report only followed the patient for six weeks. It would have been  
259 beneficial to follow up with the patient again at 12 weeks and again at 18 weeks to see the long-  
260 term outcomes.

261           Despite the patient having prolonged treatment for two and half months after the initially  
262 injury, he appeared to benefit from PT over the six-week course of treatment. Specifically, he  
263 appeared to benefit from a combination of manual therapy, MET, strengthening, and stretching.  
264 This conclusion is based on his improved ROM, decrease in pain, self-reported ease at work, and  
265 improved QuickDASH score. Overall, the patient demonstrated an increase in work capacity  
266 from conservative management of his biceps rupture over the course of six weeks without  
267 surgical intervention. Potential implications for clinical practice include offering and even  
268 possibly encouraging individuals to consider PT for the complete rupture of the long head of the  
269 biceps over surgery.

270           Future research comparing the long-term outcomes of conservative management to  
271 surgical interventions with a large population would be beneficial. Additionally, the literature  
272 would benefit from following multiple case reports of individuals who opted for PT to manage  
273 their symptoms.

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 344

345 **TABLES and FIGURES**

346 Table 1. Systems Review

<b>Systems Review</b>	
<b>Cardiovascular/Pulmonary</b>	<b>Not impaired</b>
<b>Musculoskeletal</b>	<b>Presents with ROM restrictions and pain.</b>
<b>Neuromuscular</b>	<b>Denies any neurological signs, i.e. no tingling or numbness down arm. Cervical screen negative.</b>
<b>Integumentary</b>	<b>Not impaired</b>
<b>Communication</b>	<b>Not impaired</b>
<b>Affect, Cognition, Language, Learning Style</b>	<b>Patient learns best from demonstration and performing exercises. He speaks English and has no cognition deficits.</b>

347  
 348 ROM = Range of Motion  
 349 Table 2. Initial Evaluation Findings  
 350

Tests & Measures	Initial Evaluation Results		Final Results
<b>QuickDASH</b>	<b>Scored a 20 (20% impaired)</b>		<b>Scored a 9 (9% impaired)</b>
<b>AROM</b>	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 153 degrees <b>Abduction:</b> 150 degrees *pain at end range <b>ER:</b> 90 degrees <b>IR:</b> 38 degrees L5 when reaching behind back <u><b>Right Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees	<u><b>Left Shoulder</b></u> <b>Flexion:</b> 175 degrees <b>Abduction:</b> 150 degrees <b>ER:</b> 90 degrees <b>IR:</b> 85 degrees ~T7 when reaching behind back <u><b>Left Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 168 degrees <b>Abduction:</b> 150 degrees <b>ER:</b> 90 degrees <b>IR:</b> 51 degrees Aprx. T12 when reaching behind back <u><b>Right Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees
<b>PROM</b>	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 160 degrees <b>Abduction:</b> 150 degrees <b>ER:</b> 90 degrees <b>IR:</b> 40 degrees * firm end feel <u><b>Right Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees	<u><b>Left Shoulder</b></u> <b>Flexion:</b> 175 degrees <b>Abduction:</b> 150 degrees <b>ER:</b> 90 degrees <b>IR:</b> 85 degrees <u><b>Left Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 172 degrees <b>Abduction:</b> 150 degrees <b>ER:</b> 90 degrees <b>IR:</b> 58 degrees <u><b>Right Elbow</b></u> <b>Flexion:</b> 140 degrees <b>Extension:</b> 0 degrees
<b>MMT</b>	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 5/5 <b>Abduction:</b> 5/5 *reproduce pain <b>Extension:</b> 5/5 *reproduce pain <b>IR:</b> 5/5 <b>ER:</b> 5/5 <u><b>Right Elbow</b></u> <b>Flexion:</b> 4+/5 <b>Extension:</b> 5/5 <b>Supination:</b> 5/5 <b>Pronation:</b> 5/5	<u><b>Left Shoulder</b></u> <b>Flexion:</b> 5/5 <b>Abduction:</b> 5/5 <b>Extension:</b> 5/5 <b>IR:</b> 5/5 <b>ER:</b> 5/5 <u><b>Right Elbow</b></u> <b>Flexion:</b> 5/5 <b>Extension:</b> 5/5 <b>Supination:</b> 5/5 <b>Pronation:</b> 5/5	<u><b>Right Shoulder</b></u> <b>Flexion:</b> 5/5 <b>Abduction:</b> 5/5 <b>Extension:</b> 5/5 <b>IR:</b> 5/5 <b>ER:</b> 5/5 <u><b>Right Elbow</b></u> <b>Flexion:</b> 4+/5 <b>Extension:</b> 5/5 <b>Supination:</b> 5/5 <b>Pronation:</b> 5/5
<b>Palpation</b>	Tenderness over R infraspinatus, R rhomboids, and R deltoid insertion		Mild tenderness over R infraspinatus
<b>Visual Analog Scale</b>	Patient's score ranged from 0/10 at rest to 7/10 after a day of work.		Patient's score ranged from 0/10 at rest to 2/10 after a day of work

351 AROM = Active range of Motion, PROM = Passive range of motion, MMT = Manual Muscle  
 352 Testing, IR = Internal rotation, ER = External Rotation, R = Right

353  
 354 Table 3. Goals

Short term goals.	
1.	Patient will be independent with home exercise program by 07/06/2018.
2.	Patient will gain 15 degrees of R shoulder internal rotation (55 degrees internal rotation) in order to reach behind his back by 07/20/2018.
Long term goals	

1.	Patient will have R shoulder A/PROM WNL in order to be able to do all work related activities by 08/04/2018.
2.	Patient's shoulder pain will not go above 1/10 while doing work related activities/house hold chores in order to be able to complete all work activities by 08/04/2018.
3.	Patient's score on QuickDASH will decrease by 10 by 08/04/2018.

355 AROM = Active range of motion, PROM = Passive range of motion, WNL = within normal  
 356 limits, R = Right  
 357

358 Table 4. Interventions

	Soft tissue mobilization	Manual therapy	Stretching	Strengthening
Session 1	(R) infraspinatus (R) rhomboid (R) Deltoid insertion	MET IR	IR stretch with towel behind back  Posterior capsule cross arm adduction	N/A
Session 2	(R) infraspinatus (R) rhomboid (R) Deltoid insertion	MET IR	IR stretch with towel behind back  Sleeper stretch against wall	N/A
Session 3	(R) infraspinatus (R) rhomboid (R) Deltoid insertion	MET IR	IR stretch with towel behind back  Sleeper stretch in side lying	Scapular retractions with orange bands
Session 4	(R) infraspinatus (R) rhomboid (R) Deltoid insertion	MET IR	IR stretch with towel behind back  Sleeper stretch in side lying	Scapular retractions with orange bands  ER/IR with orange band
Session 5	(R) infraspinatus (R) rhomboid (R) Deltoid insertion	MET IR	IR stretch with towel behind back  Sleeper stretch in side lying	Scapular retractions with green bands  ER/IR with green band

359 MET = Muscle energy technique, ER = External rotation, IR = Internal rotation, R = Right  
 360

<b>CARE Content Area</b>	Page
1. <b>Title</b> – The area of focus and “case report” should appear in the title	1
2. <b>Key Words</b> – Two to five key words that identify topics in this case report	1
3. <b>Abstract</b> – (structure or unstructured) a. Introduction – What is unique and why is it important? b. The patient's main concerns and important clinical findings. c. The main diagnoses, interventions, and outcomes. d. Conclusion—What are one or more “take-away” lessons?	2
4. <b>Introduction</b> – Briefly summarize why this case is unique with medical literature references.	2-3
5. <b>Patient Information</b> a. De-identified demographic and other patient information. b. Main concerns and symptoms of the patient.	4-5

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<ul style="list-style-type: none"> <li>c. Medical, family, and psychosocial history including genetic information.</li> <li>d. Relevant past interventions and their outcomes.</li> </ul>	
<p><b>6. Clinical Findings</b> – Relevant physical examination (PE) and other clinical findings</p>	5-6
<p><b>7. Timeline</b> – Relevant data from this episode of care organized as a timeline (figure or table).</p>	11
<p><b>8. Diagnostic Assessment</b></p> <ul style="list-style-type: none"> <li>a. Diagnostic methods (PE, laboratory testing, imaging, surveys).</li> <li>b. Diagnostic challenges.</li> <li>c. Diagnostic reasoning including differential diagnosis.</li> <li>d. Prognostic characteristics when applicable.</li> </ul>	6-8
<p><b>9. Therapeutic Intervention</b></p> <ul style="list-style-type: none"> <li>a. Types of intervention (pharmacologic, surgical, preventive).</li> <li>b. Administration of intervention (dosage, strength, duration).</li> <li>c. Changes in the interventions with explanations.</li> </ul>	8-10
<p><b>10. Follow-up and Outcomes</b></p> <ul style="list-style-type: none"> <li>a. Clinician and patient-assessed outcomes when appropriate.</li> <li>b. Important follow-up diagnostic and other test results.</li> <li>c. Intervention adherence and tolerability (how was this assessed)?</li> <li>d. Adverse and unanticipated events.</li> </ul>	11
<p><b>11. Discussion</b></p> <ul style="list-style-type: none"> <li>a. Strengths and limitations in your approach to this case.</li> <li>b. Discussion of the relevant medical literature.</li> <li>c. The rationale for your conclusions.</li> <li>d. The primary “take-away” lessons from this case report.</li> </ul>	11-12
<p><b>12. Patient Perspective</b> – The patient can share their perspective on their case.</p>	5
<p><b>13. Informed Consent</b> – The patient should give informed consent.</p>	4

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