Author’s response to reviews

Title: Dorsal Subscapularis Approach for the Surgical Drainage of Subscapularis Intramuscular Abscess: A Case Report

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Version: 1 Date: 09 Sep 2019

Author’s response to reviews:

Dear Editor-in-chief,

The authors greatly appreciate the opportunity to submit the revised version of our manuscript # BMSD-D-19-00310 entitled “Dorsal Subscapularis Approach for the Surgical Drainage of Subscapularis Intramuscular Abscess: A Case Report” to BMC Musculoskeletal Disorders. We would like to thank the reviewers’ instructive comments on the manuscript. We have revised the manuscript in accordance with the reviewers’ comments and have provided point-by-point response.

We hope our revised manuscript will meet the quality requirements for publication of BMC Musculoskeletal Disorders.

Sincerely,

Reviewer #1:
I think this is a good case report with useful information for surgeon. I searched PubMed database and found seldom previous report reported the subscapularis intramuscular abscess disease. Furthermore, the authors used surgical drainage technique to cure the abscess. This method is innovative and less invasive than traditional open debridement. The writing is good, with some useful figures in the manuscript. I think this manuscript can be accepted in current form.

Response: We greatly appreciate your comment. As the reviewer pointed out, the subscapularis intramuscular abscess is a rare clinical condition and few reports are available on the approach to abscess. We hope that the surgical approach used in this case helps select among treatment options for subscapularis intramuscular abscesses.

Reviewer #2:
This case review provided useful information regarding a rare procedure and is worthy of publication. The authors did a nice job of comparing this case to the limited literature available describing treatment
methods and surgical approaches for subscapularis intramuscular abscesses. Please consider providing
clearer images for Figures 1 and 2.

Response: We greatly appreciate your valuable comments and suggestion that helped us improve our
manuscript. As the reviewer pointed out, the images in Figure 1, Figure 2 and Figure 5 were unclear,
and have been replaced with clearer images in the revised manuscript.

In addition, please consider word choice throughout the text. For example, the use of "pleasant" in line
117 seems inappropriate.

Response: Thank you for the valuable comment. I agree with the reviewer that it was inappropriate in
this context and I have removed “pleasant” in line 117. The manuscript was resubmitted to an English
The following changes were made.

We performed curettage and washed as much as possible. After surgery, antibiotic administration
continued for 2 weeks. The patient’s right shoulder pain subsided and CT performed 2 months after
surgery revealed no recurrence of infection. (Abstract section, Page2, Line 47)

The present case indicated that a subscapularis intramuscular abscess could lead to severe concomitant
infections of other organs via the hematogenous route. (Abstract section, Page2, Line53)

Moreover, in this case, surgical drainage using a dorsal subscapularis approach was beneficial to
treating the abscess, which had spread from the subscapularis muscle to the glenohumeral joint.
(Abstract section, Page3 Line 55)

The present case suggests that surgical drainage using a new approach, deemed the “dorsal
subscapularis approach”, is beneficial for treating subscapularis intramuscular abscess. (Background
section, Page4, Line80)

Cerebrospinal fluid examination showed that the cell count had elevated to 3,467/μL. (Case
Presentation section, Page4, Line 89)

Ceftriaxone (4 g/day), vancomycin (1.8 g/day), and ampicillin (12 g/day) were administered for one
week. (Case Presentation section, Page4, Line93)

Thereafter, only ceftriaxone (4 g/day) was administered for an additional 2 weeks. (Case Presentation
section, Page4, Line96)

These imaging findings suggested that antibiotic resistance due to abscess and capsule formation.
Therefore, we planned open surgical drainage of the right subscapularis intramuscular abscess and
purulent shoulder arthritis. (Case Presentation section, Page5, Line 112)

First, when the joint capsule was incised, an exudate discharged from the glenohumeral joint, and a
large amount of infected granulation tissue was detected in the joint cavity. Next, we inverted the
subscapularis muscle by suturing FiberWire® (Arthrex, Naples, FL, USA) to the subcapular tendon,
and dissected the dorsal side of the subscapularis muscle from the scapula using a raspatory (Figure
4A). We detected infected granulation tissue in the subscapularis muscle belly, and performed curettage
as much as possible (Figure 4B). (Case Presentation section, Page5, Line116)

CT performed 2 months after surgery revealed no recurrence of infection (Figure 5). (Case Presentation
section, Page6, Line133)
Immunocompromised states, such as diabetes [4] or hematoma due to shoulder trauma [3, 5], which are thought to be the sources of infection, have been reported as predisposing conditions. (Discussion and Conclusion section, Page6, Line141)

Treatments for abscesses in the subscapularis muscle primarily focus on antibiotics for the causative microorganism. Surgical drainage was often performed in previous reports [1, 4, 5], but few reports are available on the optimal surgical approach for this abscess type. In approaching the subscapularis muscle belly, after a deltoid-pectoral approach, both an approach from the dorsal side of the subscapularis, dissecting it from the scapula (Figure 6), and an approach from the medial side of the coracoid process, which avoids the axillary artery, axillary vein, and nerves, were considered. (Discussion and Conclusion section, Page8, Line162)

In the present case, an abscess was found in the glenohumeral joint space in addition to the subscapularis muscle belly. Thus, we used a deltoid-pectoral approach, reaching both the subscapularis muscle and glenohumeral joint space. (Discussion and Conclusion section, Page8, Line 174)

Figure 1
Contrast-enhanced computed tomography (CT) image performed at admission demonstrated abscess formation in the right subscapularis muscle (arrow). (Figure Legends section, Page 12, Line 249)

If Figure 6 is not your original illustration, please provide credit for the source.

Response: The current Figure 6 is our team’s original illustration.