

Clinical outcomes in surgically indicated scapular fracture patients managed with conservative means: a case series

Fazal Ahmad^{1,2^}, Balgovind Satheesh Raja², Raghavendra Kaganur²

¹Department of Orthopaedic Surgery, Jawaharlal Nehru Medical College and Hospital, Aligarh Muslim University, Aligarh, India; ²Department of Orthopaedic Surgery, All India Institute of Medical Sciences, Patna, India

Correspondence to: Fazal Ahmad, MBBS, MS. Department of Orthopaedic Surgery, Jawaharlal Nehru Medical College and Hospital, Aligarh Muslim University, Aligarh, India; Department of Orthopaedic Surgery, All India Institute of Medical Sciences, Phulwarisharif, Patna, India. Email: fazahmad012@gmail.com.

Comment on: Chen X, Deng YD, Qiu XS, Chen YX, Zhang ZT. Analysis of the curative effect and prognostic factors in patients with scapular fracture with surgical indications after conservative treatment: a case series and clinical outcomes. *Quant Imaging Med Surg* 2023;13:5130-40.

Submitted Oct 09, 2023. Accepted for publication Dec 05, 2023. Published online Jan 11, 2024.

doi: 10.21037/qims-23-1408

View this article at: <https://dx.doi.org/10.21037/qims-23-1408>

We were interested in reading the original article “Analysis of the curative effect and prognostic factors in patients with scapular fracture with surgical indications after conservative treatment: a case series and clinical outcomes” by Chen *et al.* (1), published in the esteemed journal *Quantitative Imaging in Medicine and Surgery* in Vol 13, No 8 in August 2023. The study aimed to determine the influencing factors that affect the prognosis of scapular fracture with operative indication treated conservatively. We have certain reservations regarding the study.

First, the authors in their study included imaging data for the classification and treatment. One needs better understanding of the above statement. The study fails to mention whether every patient underwent computed tomography (CT) or combined CT and X-ray imaging or X-ray imaging only. Furthermore, surgical indication for inclusion criteria were (I) intra-articular fracture displacement ≥ 4 mm; (II) joint involvement $>20\%$ to 25% ; (III) glenopolar angle (GPA) $\leq 22^\circ$; (IV) fracture angulation $\geq 45^\circ$; (V) fracture displacement of the lateral margin >20 mm, or >15 mm with angulation $>30^\circ$; and (VI) two or more injuries of superior shoulder suspensory complex (SSSC) (1). The authors have selected a cut-off value for

each variable. The measurement or methods have not been mentioned. Intra and interobserver coefficient would have been measured and noted as the crux of the study involves conservative management of surgically indicated patients.

Second, one of the surgical indications and an inclusion criterion was ≥ 2 injuries of the SSSC. SSSC consists of the bony processes (glenoid process, coracoid process and acromial process), the distal part of clavicle bone, the coracoclavicular ligaments and the acromioclavicular joint (2). Authors included nine subjects with SSSC injury (six subjects having two SSSC injuries and three subjects having three SSSC injuries). There is an ambiguity in the above inclusion. Authors failed to mention the individual injuries among the SSSC. An injury to the glenoid or any of the articular surface may affect the outcome differently in comparison to non-articular part. Moreover, bias can be created by including all the injuries in an umbrella term

Third, authors included patients with a large range bracket [27–81]. One may not get same results in a patient with age 27 in comparison to patient aged 81. Moreover, older patients have higher chances of rotator cuff injury (3). The study failed to exclude these and failed to mention whether these patients had concomitant rotator cuff

[^] ORCID: 0009-0008-6968-7441.

injuries.

Fourth, authors mention that associated clavicular fracture in 15 patients and proximal humerus fracture in 1 patient was fixed with plate. In this subgroup of patients, loss of range of movement for shoulder joint may be due to injury to other structures like acromioclavicular ligament, coracoacromial ligament or coracoclavicular ligament or to one of the rotator cuff tendon. It would create a bias to include such patients in the study as surgical dissection near or around shoulder can affect the shoulder function (4,5).

Fifth, the authors don't mention about the severity and management of other associated injuries like rib fracture, pulmonary contusion, hemopneumothorax, closed craniocerebral injury, vertebral fracture, pelvic fracture or femoral fracture which would have restricted the patient to bed and adversely affected the shoulder outcome.

Sixth, the authors mention that scapular fractures were managed conservatively in patients having sustained multiple systemic injuries and were low demand for shoulder function but fails to mention about the criteria for putting these patients as 'low demand for shoulder' other than mentioning that their work didn't require to lift their hand over top of head.

Seventh, the authors mention that "all scapular fractures healed clinically and the recovery satisfaction of patients reached 100%." They also mention that two patients could not return to their pre-injury work. Were the patients still satisfied without resuming their pre-injury work?

To conclude, the study would have been better if the above points would have been included in the study.

Appendix 1: Response to "Clinical outcomes in surgically indicated scapular fracture patients managed with conservative means: a case series".

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: All authors have completed the ICMJE

uniform disclosure form (available at <https://qims.amegroups.com/article/view/10.21037/qims-23-1408/coif>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Cite this article as: Ahmad F, Raja BS, Kaganur R. Clinical outcomes in surgically indicated scapular fracture patients managed with conservative means: a case series. *Quant Imaging Med Surg* 2024. doi: 10.21037/qims-23-1408

Response to “Clinical outcomes in surgically indicated scapular fracture patients managed with conservative means: a case series”

Xi Chen^{1,2}, Ya-Dian Deng³, Xu-Sheng Qiu⁴, Yi-Xin Chen^{1,4}, Zi-Tao Zhang^{1,4}

¹Department of Orthopedic Surgery, Nanjing Drum Tower Hospital Clinical College of Nanjing University of Chinese Medicine, Nanjing, China; ²Department of Shoulder and Elbow Surgery, Luoyang Orthopedic Hospital of Henan Province (Orthopedic Hospital of Henan Province), Zhengzhou, China; ³Department of Emergency, The First Affiliated Hospital, Henan Traditional Chinese Medicine University, Zhengzhou, China; ⁴Department of Orthopedic Surgery, Nanjing Drum Tower Hospital, The Affiliated Hospital of Nanjing University Medical School, Nanjing, China

Correspondence to: Zi-Tao Zhang, PhD; Yi-Xin Chen, PhD. Department of Orthopedic Surgery, Nanjing Drum Tower Hospital Clinical College of Nanjing University of Chinese Medicine, Zhongshan Road No. 321, Gulou District, Nanjing 210008, China; Department of Orthopedic Surgery, Nanjing Drum Tower Hospital, The Affiliated Hospital of Nanjing University Medical School, Nanjing 210008, China. Email: nanjingzhangzitao@126.com; Chenyixin93@126.com.

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Thank you for sharing with us the comments from Ahmad *et al.* (1) regarding our paper, “Analysis of the curative effect and prognostic factors in patients with scapular fracture with surgical indications after conservative treatment: a case series and clinical outcomes” (2). In response to the suggestions, we reply as follows.

First, patients with scapular fractures in the study received a scapular computed tomography (CT) examination after admission from the trauma emergency center, and that is where our measurement comes from. All fracture typing and imaging analysis were carried out by two deputy chief physicians (Z.T.Z. and X.S.Q.), and the controversial cases were determined after discussion by a chief physician (Y.X.C.).

Second, ≥ 2 injuries of the Superior shoulder suspensory complex (SSSC) (3), is one of the indications for scapula surgery, so combined SSSC injuries are considered as one of the indicators affecting the prognosis. As shown in the article, the statistical results showed that SSSC injury had no statistical significance for the stability of shoulder function, so no further analysis was performed for specific injury sites in SSSC.

Third, these are regret of this study. There is no routine shoulder joint magnetic resonance imaging (MRI) examination for patients admitted through trauma center

in our database, and the rotator cuff of patients cannot be evaluated. This will be the basis for further improvement of data collection in our database.

Forth, in this study, there were no statistically significant differences in the effects of associated injuries operation on shoulder joint function.

Fifth, in this study, there were no statistically significant differences in the effects of associated injuries on shoulder joint function. We will guide these patients shoulder exercises to prevent shoulder adhesion while these patients are in bed. It's part of our conservative treatment.

Sixth, this is precisely the reason for this clinical study. It is not the sole decision of the doctor to develop a treatment plan. These patients with surgical indications make the choice of treatment of scapular fracture that the patient thinks are suitable for them according to their individual circumstances, or they refuse to accept the risk of scapular fracture due to surgery because of their overall physical condition at the time of injury, or actively choose conservative treatment because of the low requirement for shoulder joint function recovery compared with other body injuries. In short, it is a part of the cases that did not receive surgical treatment for specific reasons, and obtained a satisfactory outcome of the patients themselves.

Seventh, as described in the article introduce, scapular

fracture is caused by high-energy violent injury as usual, which is often combined with multiple injuries throughout the body. In this circumstance, the basic daily life can be restored by conservative treatment only make our patients satisfied.

Above, we are particularly grateful to these suggestions for our paper.

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