

Beom-Soo Kim, Chul-Hyun Cho, Reply:

We thank you for the opportunity to respond to the interesting letter commenting about our article “Comparison of locking plate osteosynthesis versus coracoclavicular stabilization for Neer type IIB lateral clavicle fractures” published in 2022 of *Clinics in Orthopedic Surgery*.¹⁾ We would like to answer the points raised by the authors of the letter to the editor as below.

First, the coracoclavicular distance (CCD) is measured using the anterior-posterior stress test as the authors commented. However, since this study was research on the results of fractures, we did not consider the significance of CCD was greater than that in acromioclavicular (AC) joint dislocation studies.^{2,3)} In the study of Erdle et al.,⁴⁾ anterior-posterior stress radiographs were obtained with 10 kg vertical loading before and after surgery, and it was reported that a CCD difference of 34% remained after surgery. However, the CCD measurement in that study was evaluated between the most superior border of the coracoid and the undersurface of the clavicle at the lateral border of the conoid tubercle, which is correct that there should be no difference theoretically if the fracture reduction was successful. Therefore, in our study, CCD was compared only on the injured side rather than on the healthy side, and the results between postoperative and last follow-up were compared in numeric distance rather than ratios.

Second, the authors mentioned that the union period could be delayed in the group that underwent coracoclavicular stabilization using TightRope. Although the authors' concerns were well agreed upon, the results in our study did not differ between the two groups. There was no statistical significance, and the description of the union period was not considered important for the bone healing rate between the two groups with these fractures, so it was not specifically mentioned in this article:⁵⁾ the union period was an average of 6.88 months in the group using

pre-contoured locking plate osteosynthesis and an average of 6.24 months in the group undergoing coracoclavicular stabilization using TightRope, so there was no difference between the two groups.

Third, posttraumatic AC joint arthrosis after clavicle fractures was described as a complication in the two articles cited by the authors, but in our study, there was no special pain caused by the AC joint in the enrolled patients, and AC joint arthrosis sufficient to indicate functional deterioration was not observed. As reported by Chen et al.⁶⁾ and Edelson,⁷⁾ there does not seem to be a significant relationship between clavicle fractures and arthrosis of the AC joint.

Finally, we fully agree with the authors regarding coracoclavicular stabilization using arthroscopically assisted techniques, and a few cases are currently being performed. In the future, we will conduct research and report on this technique. We would like to thank the authors for their interest and comment on our work.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

ORCID

Beom-Soo Kim <https://orcid.org/0000-0002-8728-512X>
Chul-Hyun Cho <https://orcid.org/0000-0003-0252-8741>

Correspondence to: Chul-Hyun Cho, MD
Department of Orthopedic Surgery, Keimyung University Dongsan Hospital, Keimyung University School of Medicine, 1035 Dalgubeol-daero, Dalseo-gu, Daegu 42601, Korea
Tel: +82-53-258-4771, Fax: +82-53-258-4773
E-mail: oscho5362@dsmc.or.kr

<https://doi.org/10.4055/cios22322re>

REFERENCES

1. Kim BS, Kim DH, Choi BC, Cho CH. Comparison of locking plate osteosynthesis versus coracoclavicular stabilization for Neer type IIB lateral clavicle fractures. *Clin Orthop Surg*. 2022;14(3):319-27.
2. Jeon N, Choi NH, Ha JH, Kim M, Lim TK. Clavicular tunnel complications after coracoclavicular reconstruction in acute acromioclavicular dislocation: coracoid loop versus coracoid tunnel fixation. *Clin Orthop Surg*. 2022;14(1):128-35.
3. Huang FT, Lin KC, Lin CY, Chang WN. Concomitant acromioclavicular and coracoclavicular ligament reconstruction with a Duo-Figure-8 autogenic graft wrapping technique for treating chronic acromioclavicular separation. *Clin Orthop Surg*. 2021;13(3):366-75.

4. Erdle B, Izadpanah K, Jaeger M, et al. Comparative analysis of locking plate versus hook plate osteosynthesis of Neer type IIB lateral clavicle fractures. *Arch Orthop Trauma Surg.* 2017;137(5):651-62.
5. Kim DW, Kim DH, Kim BS, Cho CH. Current concepts for classification and treatment of distal clavicle fractures. *Clin Orthop Surg.* 2020;12(2):135-44.
6. Chen MR, Huang JI, Victoroff BN, Cooperman DR. Fracture of the clavicle does not affect arthritis of the ipsilateral acromioclavicular joint compared with the contralateral side: an osteological study. *J Bone Joint Surg Br.* 2010;92(1):164-8.
7. Edelson JG. Clavicular fractures and ipsilateral acromioclavicular arthrosis. *J Shoulder Elbow Surg.* 1996;5(3):181-5.