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Letter to the Editor

Letter to the editor: Scapular morphometry in Hill-Sachs Lesions—an important step toward individualized instability care

Soner Kocak

Department of Orthopaedic and Traumatology, University of Health Sciences, Istanbul Kanuni Sultan Suleyman Training and Research Hospital, Istanbul, Turkiye

To the Editor,

I read with great interest the article by Ors et al. [1] evaluating glenoid and coracoacromial arch morphometry in patients with Hill-Sachs lesions using three-dimensional computed tomography (CT). The authors report that, compared with controls, patients with Hill-Sachs lesions demonstrated lower glenoid inclination, smaller acromiohumeral distance, and smaller glenoid height, inferior width, and surface area, while coracoacromial distance was greater. These observations are compelling because they suggest that osseous morphology may reflect more than the consequence of instability events—it may also capture a structural phenotype that influences risk.

Two strengths deserve emphasis. First, restricting the cohort to individuals aged 20–40 years reduces confounding from advanced osteoarthritis and age-related remodeling, keeping the analysis close to the population in whom recurrent traumatic instability is most clinically consequential. Second, the authors report high interobserver reliability for most parameters, supporting the reproducibility of their CT-based measurements.

That said, several considerations may further enhance clinical interpretability. Contemporary instability algorithms increasingly integrate humeral and glenoid bone defects through the glenoid track concept, which links bipolar bone loss to engagement risk and helps tailor the choice among labral repair, remplissage, and bony augmentation [2]. The smaller glenoid dimensions and altered inclination described by Ors et al. could plausibly influence the functional glenoid track and thereby modify engagement propensity. However, because glenoid bone loss and Hill-Sachs "interval" were not quantified and clinical recurrence outcomes were not reported, it remains difficult to determine whether the morphometric differences are primarily predisposing, adaptive after repeated events, or simply associative.

A related issue concerns the coracoacromial arch. Ors et al. found a larger coracoacromial distance in the Hill-Sachs group, consistent with prior work suggesting that coracoacromial morphology differs in patients with recurrent traumatic anterior instability [3]. Yet coracoacromial distance may also be affected by scapular positioning at the time of imaging and by soft-tissue status (including rotator cuff integrity), which CT cannot fully characterize. Incorporating standardized imaging positioning, reporting dominant side and activity profile, and—when feasible—correlating CT morphometry with MRI-based soft-tissue assessment could help clarify how much of the signal is attributable to fixed bony morphology versus modifiable or acquired factors.

I therefore suggest that future studies build on this valuable anatomic foundation by pairing morphometric parameters with standardized bipolar bone-loss metrics (including glenoid track classification) and by reporting clinically meaningful endpoints such as recurrent instability, return to sport, and patient-reported outcomes. Such integration would clarify whether specific morphometric patterns independently predict failure after soft-tissue stabilization and might ultimately refine risk stratification and procedure selection.

I commend the authors for advancing the conversation beyond the mere presence of a Hill-Sachs lesion and toward a broader morphologic context. With prospective clinical correlation, these morphometric signatures may prove useful in individualized counseling and surgical planning.

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Correspondence: Soner KOCAK, MD.
Saglik Bilimleri Universitesi, Istanbul Kanuni Sultan Suleyman Egitim ve Arastirma Hastanesi, Ortopedi ve Travmatoloji Klinigi, Istanbul, Turkiye.
Tel: +90 507 344 00 01 e-mail: dr.sonerkocak@gmail.com

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Authors' Reply

To the Editor,

We thank the author for the thoughtful and constructive comments regarding our study evaluating glenoid and coracoacromial morphometry in patients with Hill-Sachs lesions. We appreciate the careful reading of our work and the insightful discussion highlighting the potential clinical implications of scapular morphology in the setting of anterior shoulder instability.

As noted, the primary aim of our study was to describe osseous morphometric differences between patients with Hill-Sachs lesions and a control population using three-dimensional computed tomography. We deliberately focused on static bony parameters to explore whether underlying scapular and glenoid morphology may represent a structural phenotype associated with instability, rather than attempting to integrate functional instability models or clinical outcomes. Accordingly, glenoid bone loss quantification, Hill-Sachs interval measurement, and glenoid track classification were beyond the predefined scope of the present analysis.

We agree that contemporary instability concepts, particularly the glenoid track model, provide valuable insight into engagement risk and surgical decision-making by integrating bipolar bone defects [1]. The morphometric differences observed in our cohort, such as smaller glenoid dimensions and altered inclination, may indeed influence the effective glenoid track and warrant further investigation. As appropriately emphasized, prospective studies incorporating standardized bipolar bone-loss metrics alongside clinical outcomes such as recurrent instability, return to sport, and patient-reported measures would be essential to determine the independent predictive value of these morphologic features.

With regard to the coracoacromial arch, we acknowledge that coracoacromial distance may be influenced by scapular positioning and soft-tissue factors not fully captured by CT imaging. We agree that future work combining standardized imaging protocols with complementary MRI-based soft-tissue assessment could help clarify the relative contribution of fixed osseous morphology versus acquired or modifiable factors, as previously suggested in the literature [2].

We thank the author for placing our findings within a broader conceptual and clinical framework. We believe that our results provide an anatomic foundation upon which future integrative and outcome-oriented studies can build, ultimately contributing to more individualized risk stratification and surgical planning in patients with anterior shoulder instability.

Abdullah Ors,[1] Tuncay Colak,[1] Neslihan Buyukmurat,[2] Cengiz Erdemir,[3] Birkan Kibar[4]

[1]Department of Anatomy, Kocaeli University Faculty of Medicine, Kocaeli, Turkiye
[2]Department of Administration, Kartal Dr. Lutfi Kirdar City Hospital, Istanbul, Turkiye
[3]Department of Orthopaedics and Traumatology, Darica Farabi Training and Research Hospital, Kocaeli, Turkiye
[4]Clinics of Orthopaedics and Traumatology, Haydarpasa Numune Training and Research Hospital, Istanbul, Turkiye

Correspondence: Abdullah ORS, MD.
Kocaeli Universitesi Tip Fakultesi, Anatomi Anabilim Dali, Kocaeli, Turkiye.
Tel: +90 554 308 78 54 e-mail: abdullah.ors@kocaeli.edu.tr

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