

Letter to the Editor: From Cadaveric Safety Zones to Patient-Specific Planning: The Role of ZTE MRI in Latarjet Surgery

Bahattin Paslı¹ *

(*) Corresponding author: bahattin.pasli@hacettepe.edu.tr

1. Department of Anatomy, Hacettepe University School of Medicine, Ankara 06230, Turkey



This Letter to the Editor refers to the article "**Anatomic study: suprascapular nerve safety zone in open Latarjet surgery**" by André Leonardo Nogueira Farias, Rômulo Brasil Filho, Antonio Carlos Tenor Júnior, Jorge Henrique Assunção, Caio Santos Checchia, Alexandre Lädermann, Eduardo Angeli Malavolta (The Hive Musculoskeletal Journal - Published on May 20, 2026; <https://doi.org/10.70885/hmsj.2026.05.002>)

Response to Letter to the Editor: "**From Cadaveric Safety Zones to Patient-Specific Planning: The Role of ZTE MRI in Latarjet Surgery**" by André Leonardo Nogueira Farias (The Hive Musculoskeletal Journal - Published on June 12, 2026; <https://doi.org/10.70885/hmsj.2026.06.004>)

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Dear Editor,

We read with great interest the study by Farias et al., which provides valuable cadaveric data defining a suprascapular nerve safety zone during the open Latarjet procedure [1]. We would like to offer a complementary perspective on the authors' findings.

Cadaveric studies have been instrumental in establishing nerve-to-glenoid safety margins; however, methodological limitations merit consideration. Cadaveric nerve studies are limited by the fact that dissection may alter the native anatomical position and spatial relationships of neural structures, thereby affecting the accuracy of morphometric measurements. Conventional imaging modalities such as CT and MRI do not allow simultaneous high-resolution visualization of osseous landmarks and adjacent neural structures, limiting comprehensive *in vivo* assessment. Although radiopaque thread marking following dissection represents an innovative approach for anatomical localization, the possibility of inadvertent displacement of the nerve during dissection cannot be completely excluded [2][3].

A recent study by Paslı et al. addresses several of these limitations by employing MRI with zero echo time (ZTE) sequence for *in vivo* morphometric assessment of nerve-to-

glenoid distances [4]. ZTE MRI uniquely captures the actual cortical bone signal lost on conventional MRI while simultaneously providing soft tissue contrast, enabling assessment of both bone and nerves within a single examination and frequently obviating the need for CT. This is particularly relevant given that CT and MRI are conventionally used together in preoperative shoulder planning, thereby exposing patients to ionizing radiation while also increasing overall healthcare costs and resource utilization [5]. The feasibility of ZTE MRI was validated against direct cadaveric measurement, yielding near identical values (17.1 mm vs. 17.2 mm) [4].

The majority of published cadaveric series, including that of Farias et al., have focused predominantly on elderly specimens [1]. This stands in contrast to the typically younger Latarjet population, and age-related morphological changes such as glenoid osteophytes and altered soft tissue compliance may limit the direct applicability of these findings. Of direct relevance to the Latarjet procedure, Paslı et al. report a mean distance of 29.0 ± 3.3 mm (range 16.1–37.7 mm) between the suprascapular nerve at the suprascapular notch and the superior glenoid rim in a cohort of *in vivo*. Crucially, no statistically significant age-related difference was observed across three age groups (18–39, 40–59, ≥ 60 years), addressing a gap in the literature where age-stratified

analyses have been limited. The findings of Farias et al. support the observation by Paslı et al. of sex-related differences in suprascapular nerve to superior glenoid distance, with significantly greater values in males than in females, which may have important clinical implications for preoperative planning and surgical risk stratification [1][4].

In conclusion, ZTE MRI represents a valuable complement to cadaveric investigations. While cadaveric studies continue to define population-based safety zones and fundamental surgical landmarks, ZTE MRI offers a radiation-free modality for personalized preoperative assessment with simultaneous visualization of both osseous and neural structures. This combined capability may facilitate the translation of anatomical safety principles into individualized surgical planning. Such an approach ultimately contributes to the development of more comprehensive and patient-specific neurovascular safety strategies.

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Conflicts of interest statements

The author declare no conflicts of interest.

Ethical approval

Not applicable.

Author contributions

BP: Conceptualization, Writing – Original Draft

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