After-Ultrasound Blind Injections: Relics of Musculoskeletal Medicine or Lack Thereof

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Musculoskeletal physicians are dealing with various problems in their daily clinical practice. Among the other treatment modalities, joint and soft tissue interventions are commonplace. These injections may be used for several purposes and via different techniques owing to the physicians’ expertise and past education. Herein, it is noteworthy that ultrasound (US) provides a pivotal role as “guidance” throughout the whole management process. Although there is still a need for further high(er) level evidence comparisons between US-guided vs. blind injections; in this short paper, we would like to underscore some issues concerning the overall contribution of US in the treatment of different scenarios.

Physicians should keep in mind that US “guides” the intervention in several ways. First of all, in terms of imaging, US is a reliable diagnostic tool for a broad range of musculoskeletal pathologies. The “sixth finger” or the “stethoscope” helps the physician to evaluate the anatomy in different angles and planes. This “virtual dissection” readily makes it possible to assess pathologic lesions or anatomic variations (anything outside the bone with high resolution). As the term “seeing is believing” refers, US imaging, therefore, completes the physical examination and builds confidence about the diagnosis.

Second, when/wherever necessary, US makes the onward injection convenient and comfortable for physicians and patients alike. Initially, as mentioned earlier, providing/confirming the exact diagnosis, US guides the physician in the decision-making process. In particular, it finds the answers to the following 3 questions: (i) should I intervene? (ii) where should I inject? and (iii) what should I inject? In other words, with all these possible answers, US levels up these procedures by making the 3 questions/answers as prerequisites. For instance, when one tries to approach an athlete with Achilles problem, it is no more rational to be discussing about a rough tendon injection only. With all the B-mode, Doppler, or elastography imaging findings, the physician should be comprehensively planning his/her intervention accordingly, for example, intralesional platelet-rich plasma injection for a partial-thickness Achilles tear using the short-axis view via direct in-plane medial to lateral approach in a footballer.

Third, as regards real-time guidance during the intervention, there is no doubt that it provides precise targeting. However, when compared with the blind techniques, US-guided injections remarkably avoid collateral damage to the nearby soft tissues. To this end, the “feeling” of blind injecting colleagues regarding the needle trajectory or regarding the absence of unintentional injury to the healthy tissues can currently be perceived as no more than a “myth.” Once again, the role of US during the procedure is definitely overwhelming when compared with blind injections. In addition, with technical ease, it is also possible to share the images/videos with the patients during diagnostic and interventional procedures. This makes it possible to provide “sono-feedback” to the patients—likely to change the treatment outcome. Of note, we believe that the results of blind vs. US-guided injections should also be compared taking into account these perspectives as well, that is, not only assessing the improvement in pain or function.

On a side note, we deem one concern worth discussing. For learning blind techniques, musculoskeletal physicians adapt several fixed approaches for different anatomic locations, for example, “suprolateral approach to the knee joint” or “posterior approach to the subacromial space.” In contrast, US liberates physicians during their guided approach—also in light of the diagnostic findings. As such, for colleagues who are used to doing blind injections, it is sometimes not that easy to switch directly to US-guided techniques or to its aforementioned philosophy. Therefore, in this era, we strongly believe that young musculoskeletal physicians should be “born and bred” with US guidance, instead of being “born” with blind injections and then “bred” with US guidance. Likewise, if our colleagues get familiar with US during
their residency (in their early training period), it would be easier/effective for them to learn, tailor, and master these techniques.

Lastly, either for convenient follow-up after the treatment/procedure or to provide easy/prompt navigation for surgeons, US imaging and guidance would—for sure—be of great importance. Herewith, the pertinent literature even reports the use of intraoperative US in some surgeries. To conclude, as quoted earlier, US provides irreplaceable advantages for physicians, and its training should start as early as possible in the training of musculoskeletal medicine.

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