AMERICAN ORTHOPAEDIC FOOT & ANKLE SOCIETY®

Foot & Ankle Orthopaedics
2020, Vol. 5(2) 1

DOI: 10.1177/2473011420922807
journals.sagepub.com/home/fao

Response to "Letter Regarding: Talar Osteonecrosis After Subchondroplasty for Acute Lateral Ligament Injuries: Case Series"

Dear Editor:

We appreciate the thoughtful response to our study from Dr Guzman and Dr Vulcano.

We acknowledge the complication of the talar neck fracture discussed in their study "Safety and Effectiveness of Talus Subchondroplasty and Bone Marrow Aspirate Concentrate for the Treatment of Osteochondral Defects of the Talus."[1] In their study, the authors described this as a "stress" fracture and conjecture that the surrounding bone vasculature might have been compromised by the volume of the calcium phosphate injected (2.5 cm^3). They suggest that there may have been focal disruption of the intraosseous blood supply caused by the relatively high volume of material injected, leading to compromised bone structure and eventual stress fracture.

We agree that the volume of calcium phosphate injected is another factor that should be taken into consideration during future study of this product. In only one case of our series were records available on this factor, and in this case the surgeon did not describe what volume he or she injected.

The timing of injection is another factor to consider. In our series, the injections were performed shortly (within weeks) after acute injuries. The blood supply to the talus and potential for complications may be higher in this setting.

Calcium phosphate injected at a certain volume and for the proper indications may be a therapeutic tool in the foot and ankle surgeon's armamentarium. However, in addition to our own study[2] and the talar neck fracture described above,[1] another case series was reported at a third institution with findings of talar osteonecrosis in 4 patients.[3] We therefore believe that randomized clinical trials are warranted in the talus by those using this product prior to generalized use by the foot and ankle community. Outside of trauma, most talar bone marrow lesions in our experience occur concomitantly with osteochondral lesions of the talus. Given that there are safe, established techniques for management of this pathology, trials should compare these techniques (eg, bone marrow stimulation or debridement) against bone marrow stimulation/debridement with calcium phosphate injection or calcium phosphate injection alone. We feel that calcium phosphate injection would need to show improved clinical benefit over existing techniques to warrant its use given the potential serious side effect profile.

Again, we appreciate the thoughtful response to our article.

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