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Letter to the Editor

Letter to the Editor: Subchondral Calcium Phosphate is Ineffective for Bone Marrow Edema Lesions in Adults with Advanced Osteoarthritis

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To the editor,

I have read the study by Chatterjee et al. [2] with great interest. The authors presented results of an initial case series of patients with osteoarthritis and bone marrow edema treated with a novel percutaneous calcium phosphate (CaP) injection technique. While I value the reported clinical data, I am concerned by the unusual application of the methods used to evaluate patient outcomes, which led the authors towards conclusions that conflict with the actual data.

My initial concern is the presentation of pre and postoperative KOOS scores. The authors presented a KOOS score as a single composite score from 0 to 100. Unfortunately, I do not believe there is a validated method for combining the KOOS domains into a single composite score, and subscales should always be presented to aid in evaluation [4, 7].

The authors presented results of a Tegner-Lysholm Score and described 10 of the 22 patients as clinical failures. Specifically, they use a grading criteria based on categorizing scores as described by Mitsou et al. [5] and considered postoperative Lysholm scores < 84 as clinical failures. However, the grading system described by Mitsou et al. and previously by Tegner [8] actually evaluated the success of ACL reconstruction, not knee osteoarthritis treatments. In a study by Bengtsson et al. [1], the postoperative Lysholm score was significantly higher for ACL outcomes than other knee and lower extremity conditions. Unfortunately, Chatterjee et al. seem to have misapplied these previously validated criteria, which led to their inappropriate definition of "clinical failure." In addition, there was no discussion of surgical revisions in evaluating clinical failure or surgeon learning curve, which one would expect to influence failure rates.

Next, the authors' suggestion of a negative relationship between postoperative outcomes and severity of osteoarthritis is an overstatement given the lack of K-L Grade 4 patients, the relatively weak R^2 value presented, and the small sample size.

Finally, even though I disagree with the authors' definition of "clinical failure," the raw data presented shows that 20 of 22 patients (91%) in this small cohort study actually demonstrated improvement from baseline in one or both scores. The magnitude of mean

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Letter to the Editor

improvement was clinically significant while the improvement in mean scores from the cohorts' baseline was statistically significant. The authors suggested the concomitantly performed arthroscopies likely contributed to the observed improvements, discounting the probable effect of the CaP injection. This particular assertion is surprising in light of prior studies, which have shown arthroscopic debridement to be an ineffective treatment for osteoarthritis [3, 6].

Unfortunately, the combination of deficient methodology and small sample size presented in this study led the authors to assert definitively in their conclusions (and in a misleading title) that CaP is an "ineffective" treatment for patients with painful osteoarthritis and bone marrow edema. Contrary to the authors' advice, drawing from both this study's raw data, and my own clinical experience, I support the use of CaP injection for use in bone marrow edema associated with osteoarthritis, as well as recommend further comprehensive study of this potentially beneficial procedure.

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