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Letters to the Editor

A Randomized Trial Comparing Autologous Chondrocyte Implantation with Microfracture

To The Editor:

I read the recently published article "A Randomized Trial Comparing Autologous Chondrocyte Implantation with Microfracture. Findings at Five Years" (2007;89:2105-12) by Knutsen et al. While the results are enlightening, I am concerned that they may not be generalizable to the full spectrum of patients who present with cartilage injuries.

The authors reported that the overall two and five-year mean scores did not differ significantly between the two treatment groups. However, subanalyses of the two-year follow-up results demonstrated that treatment of smaller lesions with microfracture yielded better clinical outcomes than did treatment of larger lesions, an effect not observed in the autologous chondrocyte implantation group. Other studies have shown that lesion size can negatively affect clinical outcomes after microfracture[1-3], a finding not observed with autologous chondrocyte implantation[4-6]. Unfortunately, the authors of the current paper failed to elaborate on the effect of defect size in each treatment group.

In addition, the study did not assess the use of microfracture or autologous chondrocyte implantation in the trochlea. Cartilage defects in the patellofemoral joint remain a difficult problem. The results in one study of microfracture suggest that lesion location may affect clinical outcome over time[7]. My own experience is consistent with this finding.

While the study by Knutsen et al. showed no significant differences between the groups with regard to histological findings, this conclusion should also be interpreted with caution, given that the authors correctly acknowledged that the study was not adequately powered to demonstrate a difference between the two groups. Nevertheless, trends suggest that patients treated with autologous chondrocyte implantation had superior histological scores. This is important because the current paper suggests that hyaline-like repairs were less likely to fail.

While the results from this study provide a benchmark with which results from other studies will be compared, they should be confirmed with additional well-designed studies evaluating defect size, location, and histological findings at an even more comprehensive level.

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G. Knutsen, J.O. Drogset, L. Engebretsen, T. Grøntvedt, T.C. Ludvigsen, E. Solheim, T. Strand, and O. Johansen reply:

We agree that our results cannot be generalized to the full spectrum of patients who present with cartilage injuries. We reported the size and location of the defects and clinical data for the enrolled patients.

Only defects on the weight-bearing medial and lateral femoral condyles were included, and that has to be considered when our results are interpreted. Far more patients would have been needed in our study to justify stratification into several subgroups. Furthermore, the fact that our cohort of patients had relatively large chronic defects has to be kept in mind. Clearly, there is a need for additional studies. Even longer follow-up of our cohort is needed, and we are aware of other ongoing randomized trials that could increase the evidence base in this difficult field.

Our group reported the two-year results in 2004[1]. We reported that patients with a lesion of >4 cm^2 had significantly better clinical results following microfracture than

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