

Editorial Commentary: Platelet-Rich Plasma and Knee Meniscal Repair—The Use of Biologics Has Not Progressed Substantially Since 1983



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Abstract: When it comes to meniscal repair, optimizing the local biological environment at the repair site by performing trephination to create bleeding from the extracapsular capillary network, by rasping to abrade the local synovial tissue, or by creating bleeding from the intercondylar notch is recommended. The addition of platelet-rich plasma probably also helps, especially absent the bleeding when meniscal repair is performed concomitantly with anterior cruciate ligament reconstruction. However, pending future research, there is not enough data to recommend platelet-rich plasma augmentation for meniscal repair in all cases.

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Have we made significant progress in biological meniscal augmentation since 1983? I think the answer is no. If we take a journey back in time to the elegant work of Arnoczky and Warren¹ defining the blood supply of the meniscus, as well as the benefit of creating vascular access channels, we can see the potential for meniscal healing if the local biological environment is optimized. Still to this day, the article with the most compelling evidence for biological augmentation is the article of Cannon and Vittori² from 1992 showing a marked improvement in meniscal healing rates if a concomitant anterior cruciate ligament reconstruction was performed. Their results were substantiated by the recent article of Everhart et al.³ showing that it was beneficial to add leukocyte-rich platelet-rich plasma (PRP) augmentation to meniscal repair, but the results were no better than those obtained by just performing an anterior cruciate ligament reconstruction at the same time.

So, what do these PRP data mean? Is there enough evidence to recommend PRP augmentation for all of our meniscal repairs? No. I think the article by Haunschild, Huddleston, Chahla, Gilat, Cole, and Yanke⁴ entitled “Platelet-Rich Plasma Augmentation in Meniscus Repair Surgery: A Systematic Review of Comparative Studies” is spot-on. Not enough high-quality data exist to even perform a meta-analysis; moreover, the existing data are riddled with confounders, such as differences in PRP preparation (e.g., leukocyte rich vs poor) and volume of PRP administration, as well as the collection of variable outcome measures.

The question that we should be asking is, Should we be optimizing the local biological environment at the repair site in every case? I think the answer is yes. Whether this is accomplished by augmenting blood flow to the repair site by trephination to create bleeding from the extracapsular capillary network,⁵ by rasping to abrade the local synovial tissue,⁶ or by creating bleeding from the intercondylar notch,⁷ reasonable data exist.

Is using PRP better than not performing biological augmentation at all? The answer is probably yes. A randomized controlled trial by Kaminski et al.⁸ provides the best proof because it included a cohort of patients who underwent second-look arthroscopy; the PRP group showed a higher healing rate than the control group. The question remains whether it is worth the expense and time to prepare PRP versus just locally augmenting the blood supply (trephination, rasping,

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and so on). In addition, what PRP preparation is best (leukocyte rich vs poor)? The existing data do not answer this question. For now, I would argue that optimizing the local biological environment at the repair site using any technique that has peer-reviewed evidence constitutes current best practice.

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