

PRP Utilization in Pediatric Patient with Right Knee Pain Refractory to Arthroscopic Meniscal Repair Complicated by Plantaris Strain: A Case Study

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This case study presents the treatment and recovery of a 13-year-old female patient with a horizontal tear in the posterior horn of the medial meniscus in her right knee, sustained following a sports-related injury. While not initially identified on MRI, subsequent arthroscopy found an unstable meniscocapsular tear at the posterior horn of the lateral meniscus near the root as well. Clinically the patient's pain was localized to the posterolateral corner of the right knee and remained in this site since the injury first occurred. An orthopedic surgeon evaluated the patient initially, and the patient underwent a right knee arthroscopic meniscal repair to both the lateral and medial menisci. Although she experienced temporary improvement post-surgery, the patient later reported a pop in the back of her knee while crossing her legs and reemergence of the same pain that she had before.

Approximately two months after the initial injury, the patient sought a second opinion at our regenerative medicine clinic. Repeat MRI of her knee revealed a strain of the right plantaris muscle in addition to post-surgical changes in the medial meniscus with a linear signal extending to the tibial surface. This repeat MRI did not show abnormality in the lateral meniscus. However, the initial MRI also did not show changes to the lateral structures, and her unstable lateral tear was only found on arthroscopic inspection. The patient did not respond well to our conservative management, and it was not clear if the patient's pain was truly originating from her plantaris or if it was referred pain from her menisci. Shared decision making with the patient and her parent resulted in their opting for platelet-rich plasma (PRP) therapy. A total of 4 milliliters of PRP at 14x concentration was injected into the suprapatellar recess of the right knee under ultrasound guidance. She was instructed to rest for 3 weeks and then begin physical therapy incorporating blood flow restriction. Within six weeks of the injection the patient reported complete resolution of her pain at rest, which had previously been rated as moderate in severity.

This case highlights the potential of PRP as an alternative therapy for pediatric patients with joint pathology, particularly in those who are not surgical candidates or who experience failure and/or complications after surgical intervention. Unlike corticosteroids, PRP poses no significant risk to growth plates and offers a safer option for managing joint pathology in skeletally immature patients. However, at this time research regarding PRP utilization in pediatric patients is very limited. Further research is warranted to explore the broader applicability of PRP in pediatric sports and orthopedic care, despite its efficacy and safety profile as demonstrated in this case.