

# **Whole Extensor Mechanism Reconstruction Using Fresh Osteochondral Allograft with Synthetic Graft Augmentation**

Noah Kirschner, Charles Chun-Ting Lin<sup>1</sup>, Dylan T Lowe, Vinay Aggarwal, Laith M Jazrawi<sup>2</sup>

<sup>1</sup>NYU Langone Health, Department of Orthopedic Surge, <sup>2</sup>Center For Musculoskeletal Care

## **Background**

Knee extensor mechanism disruption is uncommon but a disabling type of injury. Acute injuries typically are managed via direct repair. Chronic injuries are considerably more difficult to manage because of atrophy of the quadriceps muscles, scarring, and retraction of the tendon. No preferred method for the management of chronic extensor mechanism disruption has been identified. Current treatment options include allografting, autografting, synthetic grafting, or a combination of grafting techniques. Patient presentation and pathology must be assessed to develop an appropriate surgical treatment plan. This video demonstrates the role of bulk extensor mechanism allografting with synthetic graft augmentation for the management of chronic extensor mechanism disruption.

## **Purpose**

This video provides an overview and case presentation and demonstrates bulk extensor mechanism allografting via synthetic graft augmentation for the management of chronic extensor mechanism disruption.

## **Methods**

Knee extensor mechanism anatomy and diagnosis and treatment options for extensor mechanism disruption are reviewed. Surgical considerations are discussed, including allografting, autografting, synthetic grafting, and a combination of grafting techniques. The case presentation of a 35-year-old man with chronic extensor mechanism disruption is reviewed. On presentation, risks, advantages, and prognosis were discussed, and the patient elected to proceed with bulk extensor mechanism allografting with synthetic graft augmentation.

## **Results**

Reconstruction with an allograft and a synthetic graft was performed, and appropriate range of motion was attained intraoperatively. Postoperative clinical outcomes demonstrated good motion and restoration of knee function.

## **Conclusion**

Bulk extensor mechanism allografting with synthetic graft augmentation affords reliable restoration of function for chronic extensor mechanism disruption in patients in whom prior reconstruction fails. Appropriate graft selection is paramount to maintain extensor function.