Trochleoplasty with Combined Soft Tissue Reconstruction for Patellar Instability

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Background:
Patellofemoral instability is a relatively common condition among the young active population, and is multifactorial in its etiology. Both soft tissue and bony constraints confer patellar instability, and are important factors to consider when evaluating a patient with patellar instability. Often times conservative treatments such as bracing and therapy are effective initial treatments. However, in those patients with recurrent instability surgery is indicated. In recent years, groove deepening trochleoplasty has gained further interest as an adjunct to other more classically described surgical techniques when addressing patellar instability. While technically demanding, when combined with other soft tissue reconstructions trochleoplasty has been shown to be a powerful tool when addressing patellar instability.

Purpose:
This video overview and case presentation demonstrates the surgical technique of performing a trochleoplasty with combined soft tissue reconstruction for recurrent patellar instability.

Methods:
The anatomy, pathogenesis, diagnosis, and treatment options for patellar instability is reviewed. A case of a 26-year-old female with a history of recurrent patellar instability with underlying trochlear dysplasia is presented. Despite conservative treatment she noted continued instability which prevented her from performing sports. After a thorough discussion of risks, benefits and prognosis, the patient elected to proceed with combined trochleoplasty with soft tissue reconstruction to improve her functional status.

Results:
The trochlear groove was undermined and subsequently deepened and secured followed by medial patellofemoral ligament reconstruction. Post-operative course was complicated by arthrofibrosis which required manipulation at 4 weeks. Following manipulation, the patient recovered uneventfully and had returned to full activities at 6 months with full strength, range of motion, and minimal pain.

Conclusion:
Trochleoplasty with combined soft tissue reconstruction is a viable treatment option in those patients with recurrent patellar instability and underlying trochlear dysplasia. While not without complications, this surgical technique remains a powerful tool in the correctly indicated patient. Appropriate patient selection and adherence to post-operative rehabilitation are crucial for optimal outcomes.