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Shen Research Day Abstract

Outcomes of Trochleoplasty for Recurrent Patellar Dislocation in Adolescents with Open Physes

Background: Patellofemoral dislocation, the most severe presentation on the spectrum of patellar instability, is most common in adolescent populations. Trochlear dysplasia is an integral component of the disorder, and procedures aimed at correcting instability are often necessary. A theoretical risk of injury to the distal femoral physis exists in these surgeries. At our institution, a thick-flap sulcus deepening technique is used to re-shape the trochlear groove. The risk of injury to the physis is not clearly delineated in the current literature.

Hypothesis: Patients with open distal femoral physes and less than 2 years of remaining growth can safely undergo thick-flap sulcus deepening trochleoplasty.

Study Design: Case Series, level 4 Evidence

Methods: Seventeen adolescents (21 knees) with open physes underwent trochleoplasty at our institution. Preoperative and postoperative radiographs were used to evaluate leg axis, patella alta, determine lateral distal femoral angle, blumensaat's angle, sulcus angle and their respective changes. MRI was used to determine trochlear dysplasia (sulcus depth, spur height, patellofemoral index), and TTTG distance. Outcome scores measured were IKDC, Kujala, and VAS scores.

Results: Median age at time of operation was 14.9 years for girls and 15.5 for boys. Mean follow up was 5.4 years from surgery. At follow up, growth plates were closed in all knees. No clinical or radiographic differences to distal femur were appreciated. One patient experienced recurrent dislocation requiring further surgery. **Final data collection of knee scores/Statistical analysis in progress.**

Conclusion: Adolescents nearing skeletal maturity can safely and successfully undergo thick-flap sulcus deepening trochleoplasty for patellar instability as a result of trochlear dysplasia.

Keywords: Patellofemoral instability, patella dislocation, trochlear dysplasia, trochleoplasty, physis, adolescent.