Growth Disturbance after Surgical Treatment of Pediatric Tibial Spine Fracture: Results from a Multicenter Cohort

Abstract ID# 22132
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Summary:
This study describes the incidence of growth disturbance after surgical treatment of pediatric tibial spine avulsion fractures.

Data:
Background: Tibial spine fractures (TSF) are a relatively uncommon injury of the knee seen predominantly in the skeletally immature pediatric population, and often require surgical treatment. We sought to assess if surgical treatment of these fractures carry a risk of growth disturbance and investigate risk factors that may contribute to a growth disturbance. Method: A retrospective analysis of children undergoing treatment of tibial spine fractures was performed, drawing from a multicenter cohort among 10 tertiary care children’s hospitals. The entire cohort of surgically treated TSFs was analyzed for incidence and risk factors of growth disturbance. The cohort was stratified into those that were under the age of 13 years at the time of treatment in order to evaluate the risk of growth disturbance in those with significant substantial growth remaining. Patients with growth disturbance in this cohort were further analyzed based on age, sex, surgical repair technique, implant type, and preoperative radiographic measurements with chi-square, t-tests and multivariate logistic regression. Results: 661 patients were reviewed and 645 patients were available for analysis after exclusions. 9 patients (1.4%) were found to have growth disturbance. Eight out of nine patients with growth disturbance were found to have an overgrowth of the operative extremity (mean 1.075 cm, range 0.5 – 2cm). The other patient was found to have a valgus angular deformity which required a guided growth procedure. Patients that developed growth disturbance were younger than those without (9.7 years vs. 11.9 years, p = 0.019). Four out of nine patients that experienced growth disturbance had valgus mechanical axis prior to injury. In the cohort of patients under the age of 13 years, 9 out of 404 (2.2%) experienced growth disturbance. There was no association with demographic factors, fracture characteristics, surgical technique, hardware type, or anatomic placement (i.e., transphyseal vs. physeal sparing fixation) and growth disturbance. Conclusions: The risk of growth disturbance after tibial spine fracture surgery is low, with a higher risk in patients who are younger at the time of injury. In those with growth disturbance, growth acceleration of the affected limb is common. Although there is no association with surgical technique, practitioners should be aware of this potential complication when treating tibial spine fractures.

Psychological Impacts Of Orthopaedic Trauma On Paediatric Patients: A Scoping Review

Abstract ID# 22436
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Summary:
Orthopaedic trauma can lead to mental health concerns including depression, anxiety, and fear of movement, and hamper readiness for return to sport among patients aged 18 or under; to date, no studies have assessed the effectiveness of early psychological interventions to mitigate these impacts.

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Category: Knee - Paediatric

Scoping Review

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Complications Following Quadriceps Tendon Anterior Cruciate Ligament Reconstruction in Pediatric Patients: A Case Series

Abstract ID# 22765
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Summary:
In this study, we report complications encountered with soft tissue QTA for ACLR. Although the use of a QTA has recently gained popularity due to its high returns to sports and low graft failure rate, surgeons must be aware of the complications and risks associated with QTA harvest.

Data:
Objectives: The purpose of this study was to analyze the complications and subsequent procedures encountered with soft tissue quadriceps tendon autograft (QTA) for anterior cruciate ligament reconstruction (ACLR) in patients <18 years old. Methods: A consecutive series of patients who underwent ACLR with a QTA with minimum 6 month-follow up were included. All patients underwent ACLR with a full thickness soft tissue QTA without a bone plug. Complications associated with the QTA harvest site and use of QTA were...