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Rate of Stress Fractures Following Rectus Sparing Periacetabular Osteotomy For Developmental Dysplasia of the Hip: An Overstated Complication?

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Hip dysplasia, Periacetabular Osteotomy, Stress Fracture, Incidence

Abstract

Introduction

Periacetabular osteotomy (PAO) is an effective and widely used surgical treatment option for developmental dysplasia of the hip (DDH) with favorable long-term results. Stress fractures are classically regarded as a rare complication of PAO. Some recent studies have demonstrated greater rates of stress fractures, leading to conflicting data in the current literature regarding the true incidence rate of stress fractures following PAO.

Materials and Methods

We retrospectively identified patients who were surgically treated for DDH with rectus sparing PAO at a single academic tertiary care institution from January 2018 to October 2023. Patients were identified by CPT and ICD-10 codes (27299 and Q65.89, respectively). Those with incomplete follow-up data after surgery or patients that underwent PAO for diagnoses other than DDH were excluded. Patients were screened for the occurrence of post-operative stress fracture, osteotomy nonunion, or pubic nonunion. Additional data collected included demographics, pre-operative and post-operative lateral central-edge angle (LCEA) and pre-operative and post-operative Tonnis angle.

Results

70 hips underwent PAO surgery in the specified timeframe. Two hips had diagnoses other than DDH and were excluded, making the final cohort 68 hips. The final cohort had zero cases of post-operative stress fractures. There were zero cases of osteotomy nonunion or pubic nonunion. The average age at time of surgery was 24.4 years old with a range of 12.3 to 36.5 years old. BMI ranged from 18.4 to 39.1 with an average of 25.7.

Discussion

Overall, the rate of stress fractures following rectus sparing periacetabular osteotomy for treatment of developmental dysplasia of the hip is low. Larger studies may be beneficial to risk factors in patients that experience post-operative stress fractures.