

Hip Arthroscopy for Legg-Calvè-Perthes Disease: Minimum 2-Year Follow-up

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Purpose: The purpose of this study is to report the results of arthroscopy for the treatment of adolescents and adults with hip pain cause by sequelae of Legg-Calvè-Perthes disease. **Methods:** All patients undergoing hip arthroscopy were prospectively assessed with the modified Harris Hip Score at 3, 6, 12, 24, 60, 120, and 180 months. We identified a cohort of 22 consecutive patients (23 hips) with Legg-Calvè-Perthes disease who had undergone arthroscopy with at least 2-year follow-up; this cohort represents the substance of this report. **Results:** There was 100% follow-up at 24 months (range, 24 to 180 months). The median age was 27 years (range, 7 to 58 years) with 14 male and 8 female patients. Findings during arthroscopy included 18 labral tears, 17 hypertrophic or torn ligamentum teres, 9 femoral and 8 acetabular chondral lesions, 5 loose bodies, 3 osteochondral defects, and 2 cam lesions. The mean improvement at 24 months was 28 points (56.7 preoperatively and 82 postoperatively). All patients were improved, although this improvement was negligible in 2 patients who underwent repeat arthroscopy. There were no complications. **Conclusions:** This series reports the results of arthroscopy for Legg-Calvè-Perthes disease and reflects that it does have a role in the management of painful sequelae. Successful outcomes can often be expected with minimal morbidity. Reduced symptoms and improved quality of life are reasonable expectations, although these data do not suggest that hip arthroscopy alters the natural history of the disease process. **Level of Evidence:** Level IV, therapeutic case series.

Legg-Calvè-Perthes (LCP) disease, avascular necrosis of the growing femoral head, results in progressive deformity of the femoral head and resultant deformity of the acetabulum.^{1,2} Hip pain and mechanical symptoms after Perthes disease may occur because of loose bodies, labral tears, subluxation, incongruence, femoral head deformity, and femoroacetabular impingement.³⁻⁵ Goals of treatment include reduction of femoral head deformity and resultant incongruity of the acetabulum.² Evidence exists that residual femoral head deformity from LCP disease is associated with osteoarthritis in adolescence and mid life.^{2,6-10} Recent recognition and newly defined pathologies of femoral acetabular impingement, facilitated by the emerging technology of hip arthroscopy, is redefining the treatment algorithm of

disorders of the hip resulting from femoral head and acetabular pathologies.

Hip arthroscopy has been used to treat LCP disease for intra-articular loose bodies, femoral acetabular impingement, labral tears, osteochondritis dissecans (OCD) lesions, articular degeneration, subchondral cysts, and snapping.¹¹⁻¹⁵ Only a few reports have been published of the findings and outcomes of hip arthroscopy in the management of adolescents and young adults in the healed stages of LCP disease with significant hip pain and mechanical symptoms.¹¹⁻¹⁶ The largest series to date comprised 9 patients.^{11,16}

We present the findings and outcomes of hip arthroscopy in the management of adolescents and young adults with symptoms of hip pain caused by the sequelae of LCP disease. The purpose of this study was to quantify improvement, if any, and to investigate potential predictive factors of postoperative outcomes. We hypothesized that patients with painful sequelae of LCP disease treated with hip arthroscopy would have improvement in hip symptoms.

Methods

We performed a retrospective review of patients with sequelae of LCP disease treated with hip arthroscopy by the senior author between January 1995 and January 2009. These patients were identified by a chart review

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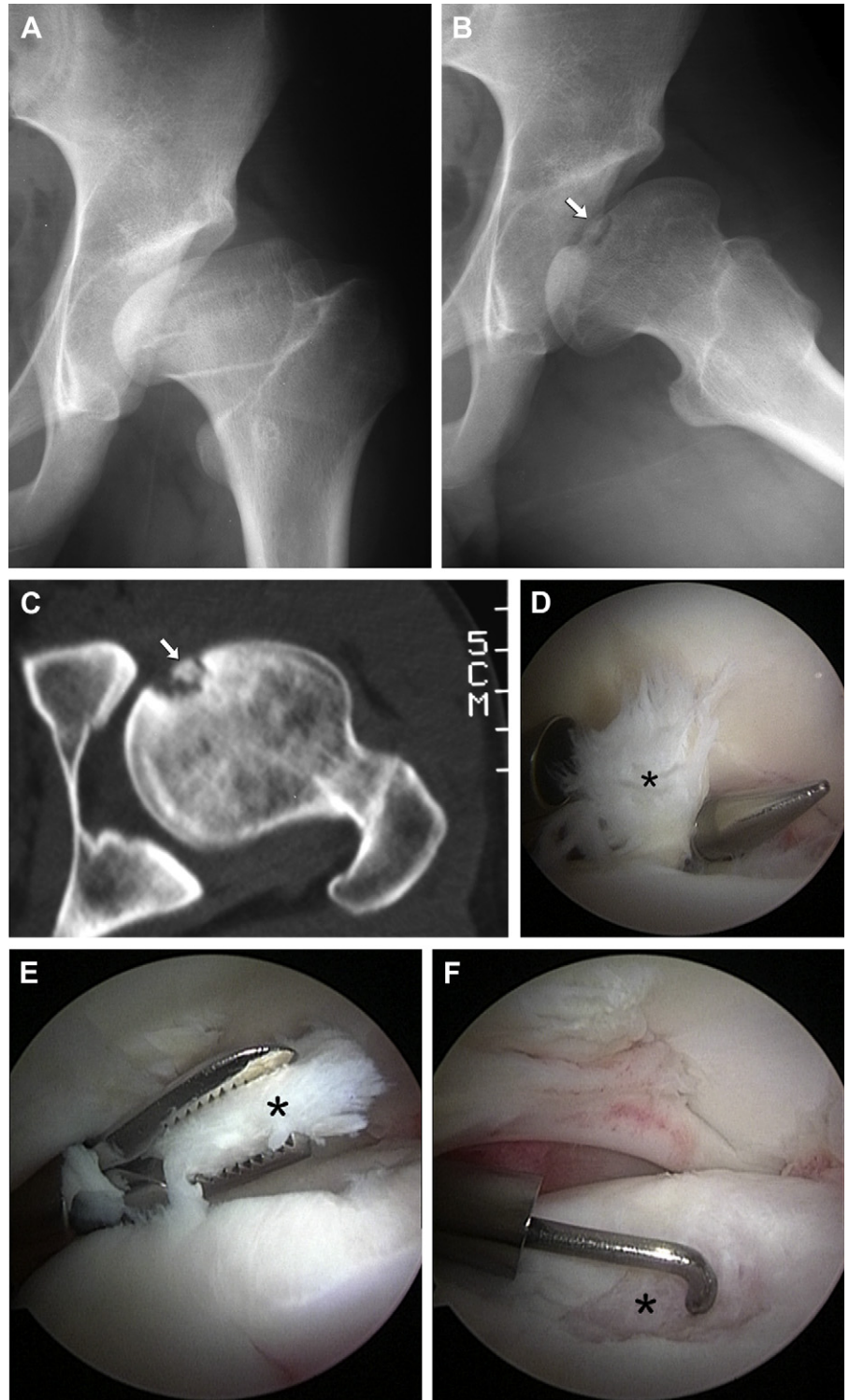


Fig 1. The first Perthes case addressed. A 16-year-old male patient was referred with a diagnosis of a loose body due to OCD associated with LCP disease. (A) The anteroposterior radiograph shows characteristic findings of left-sided Perthes disease. (B) The lateral radiograph suggests the presence of a loose body from the femoral head (arrow). (C) The computed tomography image again suggests a loose bone fragment (arrow). (D) The arthroscopic view from the posterolateral portal shows an unstable articular fragment (asterisk). (E) The unstable articular fragment (asterisk) is being retrieved with a grasper. (F) The bone fragment within the femoral head crater is being probed. It is firmly fixed by fibrous tissue (asterisk) and not the source of the patient's symptoms.

for diagnosis of LCP disease associated with hip pain. The diagnosis of LCP disease sequela was made either by a history of diagnosis as a child or radiographically, with characteristic femoral head changes.² This study received exemption status from the institutional review board.

History was obtained and physical examinations and surgical procedures were performed by 1 surgeon on all patients. The indication for arthroscopy was recalcitrant hip pain with evidence of intra-articular pathology superimposed on underlying LCP disease, such as loose bodies, labral tears, or cartilage lesions. Exclusion

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