

# The Anterior Cruciate Ligament–Deficient Knee and Unicompartamental Arthritis

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## KEYWORDS

- Anterior cruciate ligament • ACL deficient • Unicompartamental arthritis
- Unicondylar arthroplasty • UKA • Coper • High tibial osteotomy • Pes bursitis

## KEY POINTS

- Anterior cruciate ligament (ACL) insufficiency is not a contraindication for unicondylar knee arthroplasty (UKA).
- Fixed-bearing UKA may be successfully performed with long-term follow-up greater than 8 years in appropriately selected patients with ACL-deficient knees without the need for ACL reconstruction.
- Mobile-bearing UKA should be cautiously performed in patients with an ACL-deficient knee unless a previous or concomitant ACL reconstruction is performed.
- Maximize tibial component fixation; use the largest tibial tray possible without any overhang.
- A posterior tibial slope of less than 5° in ACL-deficient knees is associated with improved outcomes after UKA.
- Patients with a UKA without concomitant ACL reconstruction should expect intermittent pes bursitis for 6 months postoperatively; complete resolution of symptoms is expected.
- Fixed-bearing lateral UKA in the ACL-deficient knee is also successful but should not be attempted in the mobile-bearing knee.

## INTRODUCTION

Management of medial and lateral compartment knee osteoarthritis (OA) in an anterior cruciate ligament (ACL)-deficient knee has remained a topic of controversy among orthopedic surgeons. Patient expectations and the desire to maintain a high level of pain-free activity complicate the decision making for this select group of patients.

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Treatment options have ranged from high tibial osteotomy (HTO) with and without ACL reconstruction to total knee arthroplasty (TKA).<sup>1</sup> Recent advances in surgical technique and prosthesis design have made unicompartmental knee arthroplasty (UKA) a viable treatment option for the ACL-deficient, arthritic knee (Fig. 1).

## TREATMENT OPTIONS

### High Tibial Osteotomy

It has been well established that varus deformity of the knee can lead to progressive ligamentous laxity. The anatomic abnormalities of alignment, motion, joint position, and ligament defects associated with OA have been classified by Noyes as a single, double, or triple varus knee.<sup>2</sup>

The goal of HTO in the varus knee is to shift the mechanical axis of the knee laterally to decrease the load on the diseased, medial compartment. HTO can be performed with concomitant ACL reconstruction or with multiplane correction of varus angulation and tibial slope to decrease anterior tibial translation in the ACL-deficient knee with isolated medial compartment arthritis.<sup>2</sup> An intercondylar notchplasty is recommended



**Fig. 1.** (A) Magnetic resonance (MR) arthrogram sagittal proton density image of medial compartment OA in an ACL-deficient knee. (B) MR arthrogram sagittal proton density image of the same patient with a failed previous ACL reconstruction in a medial compartment osteoarthritic knee. (C) Postoperative plain radiograph of UKA in ACL-deficient knee in the same patient.

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