

Internal Fixation of Unstable Cahill Type-2C Osteochondritis Dissecans Lesions of the Knee in Adolescent Patients

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abstract

The treatment of osteochondritis dissecans lesions remains controversial. Twelve adolescent patients, with average 6-year follow-up, underwent compression screw fixation of unstable Cahill Type-2C osteochondritis dissecans lesions. Postoperatively, patients were evaluated with several functional tests and scoring systems, including Lysholm, IKDC, and KOOS. All lesions healed, and no clinical or radiographic evidence of degenerative disease was noted. No significant differences in thigh girth, range of motion, stability, or single-leg-hop distance was observed when compared to the unaffected, contralateral extremity. This technique is appropriate and efficacious for the treatment of unstable osteochondritis dissecans lesions.

The specific pathophysiology of osteochondritis dissecans remains controversial. Originally thought to be an inflammatory phenomenon, various investigations point to vascular insufficiency,¹ repetitive microtrauma,² and genetic factors³ as playing a role in the etiology of this disease. Prognosis and treatment recommendations are primarily determined by the patient's bone age, and secondarily by characteristics of the lesion (ie, location, fragmentation, and stability).⁴ Osteochondritis dissecans lesions of the knee have an estimated incidence between 0.02% and 1.2%,^{5,6} are more common in boys than girls by a factor of 2, and typically manifest between ages 10 and 15 years. Both knees

should be routinely imaged as bilateral presentation occurs in 15%-30% of cases.⁷

A large, controlled trial has not been conducted to investigate different treatment modalities for osteochondritis dissecans lesions. Therefore, treatment recommendations often are based on smaller case series and personal experiences of treating physicians. However, a consensus exists that nondisplaced, smaller lesions (<2 cm), in the classic location on the lateral aspect of the medial femoral condyle have a better prognosis—especially in children with open growth plates.⁷ Conversely, unstable or displaced lesions after physeal closure have little potential for healing and should therefore be treated surgically, preferably by fixation

of the fragment in its original bed.⁸ Several authors have reported on their experience with compression screw fixation of unstable osteochondritis dissecans lesions.⁹⁻¹¹ These reports mostly consisted of small case series with comparatively short follow-up, but reported >80% good and excellent results with this technique.

This article presents a case series of 12 adolescent patients who were treated with internal fixation of unstable osteochondritis dissecans lesions of the knee. Patients were observed with clinical and radiographic examination for ≥ 2 years.

MATERIALS AND METHODS

Through a retrospective, IRB-approved

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