

A Review of Arthroscopic Classification Systems for Osteochondritis Dissecans of the Knee

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KEYWORDS

- Osteochondritis dissecans • Arthroscopy • Knee • Classification • Grading • Stability

KEY POINTS

- Multiple systems have been described for classifying osteochondritis dissecans (OCD) lesions of the knee during arthroscopy, with varying levels of overlap among the existing classification systems.
- The identified classification systems associate intact articular cartilage with lesion stability, whereas instability is associated with a disruption of the articular cartilage.
- None of the studies included in this review rigorously assessed the inter-rater and intra-rater reliability of an arthroscopic grading system for OCD lesions of the knee.
- Future research is needed to establish a classification system for OCD of the knee during arthroscopy that demonstrates high inter-rater and intra-rater reliability.

INTRODUCTION

Osteochondritis dissecans (OCD) is a focal, idiopathic alteration of subchondral bone with potential for instability and disruption of adjacent articular cartilage that may result in premature osteoarthritis.¹ Several risk factors have been linked to OCD of the knee,

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including male sex, age (with 10–20 years being at highest risk), sports participation, and African-American ethnicity.^{2–4} Three primary methods have been used to assess the stability, severity, and potential for healing of the OCD lesion: radiographs, magnetic resonance imaging (MRI), and arthroscopy. Although many methods have been developed to classify the various stages of OCD lesions, none has been rigorously validated for accuracy, ease of use, or prognostic predictive ability.

The main principle underlying the classification of OCD lesions focuses on the stability of the lesion. The term *stability*, in regard to OCD lesions, has been used to describe the mechanical integrity and stability of the subchondral OCD lesion.⁵ Furthermore, characteristics of a stable lesion (Figs. 1 and 2) include those that have stable articular cartilage, whereas a disruption in the articular cartilage (Fig. 3) is present in lesions that are usually loose or unstable (Fig. 4).⁵ Some lesions may be stable but do include a breach in the articular cartilage.⁶

Multiple grading systems exist for classifying OCD of the knee during arthroscopic surgery. However, variation among these classifications and the lack of a standardized method for grading OCD lesions prevents comparison among the published literature on arthroscopy of OCD of the knee. This article reviews the English-written literature for existing systems for classifying OCD lesions of the knee during arthroscopic surgery.

REVIEW OF THE LITERATURE

Radiographic and MRI Classifications

Berndt and Harty⁷ described one of the first classification systems in 1959. They classified talar OCD lesions on radiographic images, with stages ranging from a small area of compression of the subchondral bone to a completely detached fragment or loose body. Rodegerdts and Gleissner^{8,9} described an early classification system for OCD of the knee in 1981. They classified lesions on radiographic images, with 5 stages ranging from a potentially depressed osteochondral fracture to a displaced fragment or loose body. Subsequent authors have described additional radiographic methods of classification, all with various ranges of modifications and reclassifications.^{5,7,10,11}

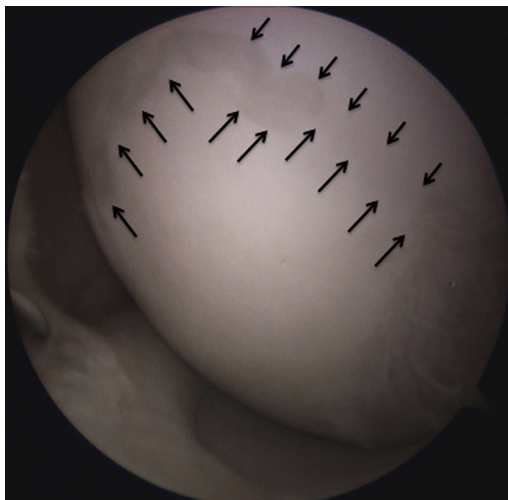


Fig. 1. Stable OCD lesion with clearly delineated border (*black arrows*). Lesion is stable to probing during arthroscopy.

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