Establishing Consensus on the Diagnosis and Management of Elbow Osteochondritis Dissecans: A Delphi Study of Orthopedic Experts.

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INTRODUCTION:
Elbow osteochondritis dissecans (OCD) is a joint disorder characterized by the separation of articular cartilage and subchondral bone, frequently affecting adolescent athletes engaged in repetitive overhead or weightbearing activities. While early-stage lesions may respond to conservative management, unstable or advanced cases often necessitate surgery. Despite a growing body of literature, variability persists in diagnostic approaches, lesion classification, treatment indications, and outcome evaluation, limiting the development of standardized protocols. This study aimed to establish expert consensus on the diagnosis, management, and follow-up of elbow OCD using a structured Delphi methodology.
METHODS: A three-round Delphi study was conducted with 13 expert orthopedic surgeons from the American Shoulder and Elbow Surgeons (ASES) OCD Study Group. Experts represented eleven U.S. institutions and one international site. Panelists participated anonymously in iterative surveys designed to explore and refine opinions on the diagnosis, conservative and surgical management, and outcome evaluation of elbow OCD. Survey development was informed by a literature review and mediator input. Questions were scored using a 5-point Likert scale, and a ≥75% threshold was pre-defined to establish consensus. Responses were analyzed by an independent researcher.
RESULTS:
Twelve of thirteen panelists completed all three survey rounds. In the domain of diagnosis, consensus was achieved on several key elements. All participants endorsed X-ray (100%) as the first-line imaging modality and MRI (100%) as the preferred advanced imaging technique. MR arthrogram was deemed nonessential by 76.9% of respondents. Mechanical symptoms and cartilage flaps on MRI were unanimously identified as the most reliable indicators of lesion instability. However, no consensus was reached on clinical features such as decreased range of motion or on a preferred lesion classification system, although 76.9% agreed that a binary “stable vs unstable” framework was the most useful.
For conservative management, panelists supported a three-month treatment trial (84.6%) without the use of immobilization (83.3%). MRI was the preferred imaging modality for follow-up (91.6%), with 75% favoring repeat imaging at three-month intervals. Indicators of conservative treatment failure included persistent symptoms (100%), imaging progression (100%), and mechanical symptoms (92.3%). Return-to-play criteria required full range of motion (100%) and evidence of healing on imaging (75%).
In the surgical management domain, consensus was reached for using marrow stimulation techniques in contained lesions (92.3%) and whole tissue techniques for large, uncontained, or lateral lesions (84.6–92.3%). No consensus emerged regarding graft type or the role of autologous chondrocyte implantation. Postoperative immobilization for 1–2 weeks (76.9%) using a splint (91.6%) or hinged elbow brace (75%) was supported. Strength training was recommended starting at three months postoperatively (75%), and return to sport was advised no earlier than six months (83.3%). Postoperative imaging at three months (100%) using X-ray (75%) was endorsed. The primary benchmark for return to play was achieving the same pre-injury level (100%).
Regarding outcomes and registry recommendations, pain score (VAS) and elbow range of motion were unanimously considered critical measures. Although no single patient-reported outcome measure (PROM) reached full consensus, 75% of participants supported including the KJOC, PROMIS, and DASH scores. Additionally, 91.7% agreed that subjective elbow scoring should be incorporated in future registries.
DISCUSSION AND CONCLUSION: This Delphi consensus study defined key clinical practices for the diagnosis and management of elbow OCD. Experts endorsed initial imaging with X-ray followed by MRI, with no role for MR arthrogram. Mechanical symptoms and cartilage flap presence were key diagnostic indicators of instability. Stable lesions warrant at least three months of non-operative management without immobilization, monitored via MRI. For surgical candidates, marrow stimulation was preferred for contained lesions, while larger, uncontained, or lateral lesions were managed with whole tissue techniques. Postoperative care should include short-term immobilization, delayed strength training, and follow-up imaging at three months. Return to play should be contingent upon symptom resolution, full range of motion, and radiographic healing. Persistent disagreement on classification systems, graft choice, and certain return-to-play protocols highlights ongoing variability in practice. Development of an elbow-specific, validated classification system is needed to support diagnostic consistency and treatment stratification. This consensus provides a foundation for future research, registry design, and clinical standardization in the treatment of elbow OCD.

Figure 1: Consensus-Based Clinical Workflow for Diagnosis and Management of Elbow OCD