The purpose of the study was to report early functional and radiographic results of a small series of patients who underwent autologous chondrocyte transplantation-collagen membrane seeding (ACT-Cs) for focal chondral defects of the shoulder. The outcome of 4 consecutive male patients (mean age, 29.3 ± 6.2 years; range, 21-36 years) who underwent ACT-Cs for treatment of large symptomatic glenohumeral cartilage defects was retrospectively evaluated with clinical and radiographic measures at a mean of 41.3 ± 24.9 months (range, 11-71 months) after surgery. The evaluation included a visual analog scale for pain, the Constant score, the American Shoulder and Elbow Surgeons shoulder index, the Rowe score, and a satisfaction scale. Magnetic resonance imaging evaluation was performed according to the Magnetic Resonance Observation of Cartilage Repair Tissue scoring system. There were 3 humeral full-thickness cartilage defects (each 6.0 cm²) and 1 glenoid full-thickness cartilage defect (2.0 cm²). The mean postoperative visual analog scale score (0.3 of 10), the mean unweighted Constant score (83.3 ± 9.9), and the mean American Shoulder and Elbow Surgeons index (95.3 ± 8.1) were representative of satisfactory shoulder function. The Magnetic Resonance Observation of Cartilage Repair Tissue score was indicative of satisfactory defect.
coverage with signs of fibrocartilaginous repair tissue. Autologous chondrocyte transplantation at the glenohumeral joint is a remote option for young adults with symptomatic, isolated, large-diameter cartilage lesions. Potential complications as a result of the open approach and 2-step procedure have to be considered carefully. Long-term data, larger patient populations, and randomized studies are required to determine the potential for chondrocyte transplantation techniques to be standard procedure for treatment of symptomatic, large-diameter, full-thickness cartilage defects in the glenohumeral joint.