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Arthroscopy-assisted reduction and internal fixation for tibial plateau fractures

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The goal of surgical treatment for tibial plateau fracture is to reconstruct the articular surfaces, to obtain a stable fixation for early motion and repair all concomitant lesions. With the assistance of arthroscopy, the articular surface can be readily seen and the intra-articular structures can be thoroughly examined while the fragments are fixated with minimal soft tissue dissection. The purpose of this study was to evaluate the functional and radiographic results and the complications of arthroscopically assisted reduction for tibial plateau fractures. Forty-three patients were treated with arthroscopically assisted reduction for tibial plateau fracture, with an average follow-up period of 2 years from 2014 to 2017. Evaluations were performed clinically and radiologically with modified Rasmussen's criteria.

According to the Schatzker classification, the fractures types were as follows: type I, 1 (2%); type II, 9 (21%); type III, 7 (16%); type IV, 7 (16%); type V, 14 (33%); and type VI, 6 (14%). The mean age at operation was 46.7 years (range,

17 to 66 years). Thirty-one of 43 patients (72.1%) in our series had associated intra-articular lesions. The mean postoperative Rasmussen clinical score was 28.1 (range, 18 to 30) and the mean radiologic score was 16.0 (range, 11 to 17). Good or excellent clinical and radiologic results were achieved in 93% of patients. Secondary osteoarthritis was noted in 5 injured knees (11.6%). All 43 fractures were successfully united. No complications directly associated with arthroscopy were noted.

With the assistance of arthroscopy, the advantages included direct visualization of intra-articular fractures, accurate fracture reduction, reduced morbidity in comparison to arthrotomy, simplified diagnosis and treatment of meniscal and ligamentous injuries and thorough joint lavage and removal of loose fragments. Arthroscopic surgery for tibial plateau fractures is a safe, reproducible and effective procedure that provides precise diagnosis and effective treatment.

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