Does Partial Patellectomy Lead to Patella Baja?

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Background/Purpose: Partial patellectomy has been described since 1935 with mixed results in the literature. The outcomes of this technique are often grouped with all open reduction techniques. We retrospectively studied a cohort of partial patellectomy patients to determine their clinical and functional outcomes, and to evaluate whether they developed the complication of patella baja.

Methods: 32 patients were identified who underwent partial patellectomy with patellar tendon advancement from 2009-2013. Charts were retrospectively reviewed to record range of motion and quadriceps strength at last follow-up. Final follow-up radiographs were examined and the Hepp method of measuring patellar height was applied, as this is the only described method still applicable given the change in patellar anatomy (Fig. 1) Functional outcomes were assessed with the Marx scale and the IKDC (International Knee Documentation Committee) score through interview of the patients.

Results: Follow-up notes and radiographs were available on 32 patients. The average final follow-up was 9.4 months (range, 3-84). 27 patients achieved full extension postoperatively, and 24 reached at least 100° of flexion. 16% of patients were documented as having 3/5 quadriceps strength; the remaining patients were graded as 4/5 to 5/5. Radiographically, 42% patients had at least one of the Hepp measurements indicate patella baja, and five of those demonstrated patella baja with both measurements. 17 (53%) patients had ipsilateral lower extremity injuries. 18 patients (9 with ipsilateral injuries) were available by phone to answer the Marx and IKDC functional outcome surveys which demonstrated an average Marx scale of 2.8 (range, 0-12; 16 would be a perfect score) and an average IKDC score of 45.71 (range, 12.64-81.61; 100 would be a perfect score). The patients with ipsilateral injuries scored an average IKDC of 50 and the patients without ipsilateral lower extremity injuries scored an average IKDC of 40.1 (P = 0.28). These were not significantly different. The Marx scores for these groups were identical.

Conclusion: This is a retrospective study to specifically examine clinical, radiographic, and functional outcome results of partial patellectomies for patella fractures. This technique is useful for those comminuted distal pole patella fractures and also due to the fact hardware prominence and need for removal is not an issue. Our clinical results indicated reasonable clinical function of the affected leg. Patellar height measurements indicated that patella baja was common--42%. As with recent studies, the functional outcome scores were poor. This could be due in part to the high rate of patella baja. Further studies are warranted as we are finding out patella fractures, no matter what the fixation type, are not benign injuries.