

Abstract

Title: Manipulation Under Anesthesia and Lysis of Adhesions Affords Similar Knee Flexion as Those Without Stiffness After Sulcus-Deepening Trochleoplasty: a Prospective Study.

Introduction:

Sulcus-deepening trochleoplasty has been established as an effective treatment for patellar instability due to trochlear dysplasia. However, arthrofibrosis is a known occurrence following trochleoplasty which may require a manipulation under anesthesia (MUA) and lysis of adhesions (LOA) to increase the knee range of motion (ROM), especially flexion. To our knowledge, no study has prospectively followed patients for ROM improvements and subsequent complications after undergoing MUA/LOA in the setting of sulcus-deepening trochleoplasty.

Methods:

A total of 49 patients (54 knees) with severe trochlear dysplasia were prospectively enrolled and underwent sulcus-deepening trochleoplasty. Concomitant procedures during the trochleoplasty included medial patellofemoral ligament reconstruction (100.0%), lateral release or lengthening (50.0%), tibial tubercle osteotomy (37.0%). Physical examination including ROM and findings of recurrent patellar instability were collected for all patients. Arthrofibrosis was defined as active and passive flexion <90 degrees when at least 3 months post op with a plateau in progress with therapy. Paired sample and independent sample t-tests were utilized. A p-value <0.05 was considered significant.

Results:

78.9% of patients were female with an average age of 19.9 (+/- 6.1 years) with an average follow-up of 13.6 months. Of the 54 knees that underwent sulcus-deepening trochleoplasty, 9 had arthrofibrosis and underwent a MUA. Seven patients also underwent arthroscopic LOA at the same time of manipulation as acceptable range of motion could not be achieved with manipulation alone. Those with arthrofibrosis had a pre-manipulation average ROM of 70.33 (+/- 18.16) degrees which is significantly different from those without arthrofibrosis who had an average ROM of 129.86 (+/- 13.51) degrees ($p < 0.000$). Following MUA and/or LOA, the arthrofibrotic group had a significantly increased ROM compared to their preoperative ROM (127.56 +/- 11.17 degrees vs. 70.33 +/- 18.16 degrees; $p < 0.000$). The arthrofibrotic group after MUA/LOA was not significantly different from the nonarthrofibrotic group (average flexion of 127.56 +/- 11.17 degrees vs. to 129.86 +/- 13.51 degrees; $p = 0.802$). There were no complications from the MUA or LOA reported at subsequent follow-up visits.

Conclusion:

If arthrofibrosis is encountered following a sulcus-deepening trochleoplasty, then a MUA and/or LOA is likely to result in a range of motion that is not dissimilar to the non-arthrofibrotic knee following the same procedure.