INTRODUCTION: It is not clear why arthroscopic surgery might improve osteoarthritis of the knee. This study continues the work of a pilot study evaluating three variations of arthroscopic surgery in an attempt to determine why patients might benefit from arthroscopy for osteoarthritis of their knee.

METHODS: One hundred eighty eligible patients gave informed consent to have one of three procedures blindly performed on their arthritic knee: arthroscopic debridement (chondroplasty, menisectomy, but no abrasion arthroplasty), arthroscopic lavage (diagnostic arthroscopy), and placebo arthroscopy (skin incisions made but no instruments inserted into knee). The procedures were assigned randomly once the patient was asleep in the operating room. Postoperatively, patients were evaluated at 2 weeks postoperatively, 6 weeks, 3 months, 1 year, 18 months, and 2 years by someone other than the operating surgeon. Results were assessed by patient questionnaire, physical exam, and stair climbing and walking for time. Pain, function, and satisfaction with the surgery were used as primary outcomes. Pain was assessed in three ways: a knee specific pain scale created for this study; an arthritis pain scale from the Arthritis Impact Measurement Scale (AIMS-2); and a body pain scale from the SF-36 general health measure. Function was assessed in three ways: total time for walking 100 feet, climbing one flight of stairs, and descending one flight of stairs; the AIMS-2 walking/bending subscale; and the SF-36 physical functioning subscale. Satisfaction was assessed by creating a 6 item questionnaire with each question providing a maximum of five points of the total score of 30.

RESULTS: Preoperatively, there were no significant differences between treatment groups for any of the outcome measures. There were no significant differences between groups for any of the baseline characteristics such as age, sex, race, x-ray severity, physical health, and mental health.

Two weeks postoperatively, pain was significantly less for the placebo group than either of the other two groups as assessed by both the knee specific scale (p <.05) and the SF-36 subscale (p <.05). There was no significant difference between the three groups at any other time interval for any of the pain measures. The three treatment groups showed improvement in pain compared to baseline at 6 months, one year, and two years for each of the three pain measures (p <.01).

At two weeks postoperatively, function in the placebo group was significantly better than the other two groups as measured by the AIMS-2 walking and bending scale (p <.05). There was no significant difference between the three groups at any other time interval for any of the function measures. The three treatment groups showed improvement in function compared to baseline at 6 months, one year, and two years for the SF-36 function subscale (p <.05). The three treatment groups also showed significant improvement in the AIMS-2 walking and bending subscale compared to baseline at 6 months and 1 year (p<.05), but not at two years.

There were no significant differences between groups for satisfaction with the surgery at any of the time periods postoperatively. Satisfaction for the three treatment groups remained significantly greater at 6 months, 1 year and 2 years postoperatively compared to two weeks postoperatively (p<.05).

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Severity of arthritis as measured by radiographs was not associated with any of the seven primary outcomes at any postoperative time period using a general linear models approach.

The lack of differences between treatment groups could not be explained by differences in analgesic or anti-inflammatory medicine.

There were no complications during the study.

DISCUSSION: Patients with osteoarthritis of the knee typically report incomplete, temporary improvement with arthroscopic surgery. The results of this study suggest the improvement is due to the placebo effect. Patients undergoing placebo arthroscopy experienced improvement in pain and function and satisfaction with surgery similar to their arthroscopic lavage and arthroscopic debridement cohorts.

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