

## **Short- and Long-Term Complications of Trochleoplasty: A Systematic Review**

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**INTRODUCTION:** Trochlear dysplasia is an anatomic risk factor for patellar instability and can be surgically addressed with trochleoplasty. There are disparities in the reported incidence and timeframe of the complication profile of trochleoplasty, specifically postoperative patellofemoral arthritis. This study seeks to identify short and long-term complications of trochleoplasty and define rates of postoperative patellofemoral arthritis.

**METHODS:** PubMed, Embase, and Web of Science were queried for terms related to trochleoplasty. Included studies were clinical studies using trochleoplasty to manage patellofemoral instability and were published in English in peer-reviewed journals. Excluded studies were systematic reviews and meta-analyses, cadaveric studies, animal studies, and case reports. Patient demographics, follow-up time, concomitant procedures, complications, and subsequent surgeries were collected. Studies were grouped by follow-up time into <2 years, 2-5 years, 5-10 years, and >10 years. Data was recorded descriptively.

**RESULTS:** Thirty-five studies met inclusion criteria with 1336 patients (64% female). There were 142 (10.6%) patients with less than 2 years of follow-up, 871 (65.2%) with 2-5 years, 221 (16.5%) with 5-10 years, and 102 (7.6%) with more than 10 years. The overall complication rates ranged from 0-33%. Seven (20%) studies specifically reported on postoperative arthritis. In patients with <2 years, 2-5 years, and 5-10 years follow-up, the most common complication was postoperative stiffness seen in 5 (5.0%), 30 (3.4%), and 11 (5.0%) patients, respectively. Patellofemoral arthritis is the most common complication in patients with more than 10 years of follow-up seen in 68 (66.7%) patients. Postoperative patellofemoral arthritis was also seen among patients with 2-5 years of follow-up (15, 1.8%) and 5-10 years of follow-up (4, 1.5%). Recurrent instability occurred in 10 (0.7%) patients.

**DISCUSSION AND CONCLUSION:** In patients undergoing trochleoplasty, patellofemoral arthritis is seen at an incidence of 66.7% after 10 years, which is greater than the natural history of arthritis following patellar instability.