

#158 Matthew Chung

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Trends in Osteotomy and Cartilage Replacement-Based Procedures using the National Surgical Quality Improvement Program Database

INTRODUCTION: Osteotomy and cartilage replacement-based procedures (OCRBPs) include femoral shaft/supracondylar osteotomies (FSSO), high tibial osteotomies (HTO), tibial tubercle osteotomies, open chondrocyte and osteochondral graft implantation (OI), knee arthroscopies with meniscal transplantation (KAMT), and abrasion arthroplasties (AA). As of yet, there is a lack of studies investigating general trends in these procedures, their respective complication rates, and patient demographics.

METHODS: The American College of Surgeons National Surgical Quality Improvement Program was used to analyze OCRBPs prevalence in the United States between 2008 and 2016. Data from a total of 6,995 OCRBPs performed on 6,952 patients were extracted. Descriptive variables such as age, sex, body mass index, complications (surgical and medical), and indication for surgery were also collected. Analysis for statistical significance in the trends of this data was done using a Pearson correlation.

RESULTS: The number of OCRBPs done in the US increased to 1,337 in 2016 from 107 in 2008, a 43.5% average annual increase ($r=1.0$, $p<0.01$). The most frequently performed OCRBP, AA (5,691), delineated the largest overall increase, with 945 more procedures occurring in 2016 than in 2008. However, OI exhibited the highest annual increase at a rate of 79.8% ($r=1.0$, $p<0.01$). KAMT had a steady, yet insignificant, annual increase ($r=0.3$, $p=0.481$), and both HTO and FSSO witnessed the highest risk of surgical (4.9%) and medical (20.1%) complications, respectively (both, $p\leq 0.008$).

DISCUSSION: There is an increase use of OCRBPs performed on relatively young, overweight/obese patients, with the majority of complications arising in the overweight and obese patients. This study provides trends to begin determining the future catering of OCRBPs for certain demographics and the impact of increased OCRBP incidence.