

Economic burden of the Surgical Treatment of Adult Acquired Flatfoot in the US Population

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Introduction/Purpose: Numerous studies have been published on the treatment of adult acquired flatfoot deformity (AAFF). However, there has been little focus on its incidence, and economic burden in the general US population. This study updates and examines surgical incidence rates, demographic factors, and economic burden compared to our previous study that used data from South Carolina. Our previous study reported on data from 2004-2014 while this study reports on data from 2004-2014 using a nationwide database. Additionally, we evaluated the number and type(s) of surgeries performed for patients with a diagnosis of flatfoot who underwent surgery. Our hypothesis was that the surgical incidence of AAFF and its economic burden would increase given the aging population and improvements in surgical treatment options.

Methods: The Nationwide Inpatient Sample (NIS) compiles patient data representing a 20% stratified sample of all hospital discharges nationwide. Along with demographics, diagnosis and procedural codes the NIS includes: admission type, length of stay, age, gender, race, Diagnostic Related Group, discharge status, primary expected payer, total charges, and physician specialty code. Bivariate descriptive statistics were utilized to analyze the data. Surgical incidence was calculated by assessing the number of surgical procedures compared to the number of lives covered by the Centers for Medicare and Medicaid Services (CMS). Demographics and medical comorbidities of patients who progressed to surgical treatment for AAFF were analyzed. The cost associated with the surgical care episode was calculated to determine the economic burden of the disease. Given the retrospective nature of the study, we utilized a regression analysis with multiple dependent variables to look for trends that could be analyzed in a larger cohort or prospective fashion.

Results: In total, 160,795 patients underwent AAFF corrective surgery between 2004 and 2014. Patients who underwent surgery for AAFF were more likely to be white, female and in their 5th decade of life. Average surgical incidence during this time period was 5.12%. Patients were most likely to undergo a combination of soft tissue and fusion procedures, followed by soft tissue procedures alone and then fusion procedures in isolation. The total nationwide healthcare costs associated with patients who underwent surgery for AAFF exceeded 4 billion dollars.

Conclusion: Our data demonstrates that there has been an increasing burden of disease for AAFF on society over the past 10 years. Patients undergoing surgery for AAFF contributed more than 4 billion dollars to national healthcare costs between 1994-2014. Our study confirmed prior small scale studies of the population most at risk and demonstrated an increasing surgical incidence. The increase in incidence and burden parallel rising rates of diabetes and obesity seen nationwide, known risk factors for AAFF. We hope that this data will lead to increased patient education, clinical awareness and resource allocation for future study of AAFF disease prevention.

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