In-Patient Trends and Complications after Total Elbow Arthroplasty in the United States.

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Introduction: Total elbow arthroplasty remains to be one of the few treatment methods for rheumatoid arthritis and post-traumatic arthritis. Few procedures are performed each year and they are mainly concentrated at select centers around the country. There are few large studies describe the long-term survival of the total elbow arthroplasty and associated cost and complications. To our knowledge, there is currently no data describing the national trends of total elbow arthroplasties in the United States. The purpose of our study is to evaluate the current practice trends and associated in-patient complications of total elbow arthroplasty at academic centers in the United States.

Methods: We queried the University Healthsystems Consortium (UHC) administrative database from 2007 to 2011 for patients who underwent an elective total elbow arthrolasty, according to their ICD-9 procedure code 81.84. A descriptive analysis of demographics was performed which included patient age, sex, race, and insurance status. Next, a similar analysis of patient clinical benchmarks was performed, including hospital length of stay (LOS), hospital direct cost, in-hospital mortality, complications, and 30-day readmission rates.

Results: Our cohort consisted of 3,146 adult patients who underwent a total elbow arthroplasty at 159 different academic medical centers across the country during the specified time period. The annual surgical volume for individual surgeons who performed this procedure was 7 +/- 5. The cohort was comprised of 36.5% male and 63.5% female patients. The majority of the cohort 2,334 (74%) was white, 285 (9%) were black, 236 (7.5%) were Hispanic, 16(0.5%) were Asian, 9% were other. The mean age of the cohort was 58 years old +/- 17. Overall, 51% of the cohort had private insurance, 41% had Medicare, and 8% had Medicaid. At least 70% of the cohort had one or more chronic medical conditions. The mean LOS for the cohort was 4.2 days +/- 5. The mean total direct cost for the hospital was $16,300 +/- 14,000 per case. In hospital mortality was less than 1% for the cohort during their index hospitalization. Inpatient complication rate included: DVT 0.8%, re-operation 0.5%, and infection 0.4%. There was a readmission rate of 6.4% within the first 30 days from the time of discharge.

Discussion: Total elbow arthroplasty is associated with low in-patient complications that include DVT (0.8%), re-operation (0.5%), and infection (0.4%). However, a significant number of patients were readmitted to the hospital within 30 days of the index procedure (6.4%). Majority of the patient population is female that had either private insurance or Medicare. Hospital stay average to 4 days with a cost of $16,300 +/- $14,000 per case.

Significance: Total elbow arthroplasty is associated with low in-patient complications that include DVT (0.8%), re-operation (0.5%), and infection (0.4%). However, a significant number of patients were readmitted to the hospital within 30 days of the index procedure (6.4%).

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