

Outpatient Total Joint Replacement Surgery- Are We Ready?



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Total joint replacement surgery will increase exponentially in the next decade. With 80 million baby-boomers coming of age it is estimated that over 1 million total joint replacements will be performed in the United States per year. It is widely regarded as one of the most successful surgical procedures impacting the quality of life of the patient. Joint arthroplasty, however, has become a major area of health care expenditure: bundled-payments, pay for performance, penalties for readmission have created a different economic landscape.

Unfortunately the cost of this care is increasing, while the reimbursement for these procedures steadily declines. With bundled-payments looming in the near future containing costs will be paramount. This can be done in variety of ways: streamlining services, decreasing implant costs, efficient high volume operating programs, decreasing length of hospital stay, and reserving postoperative rehabilitative services for our patients with significant medical co-morbidities.

By far the most significant reduction in cost will come from decrease length of stay at the hospital and reducing the need for postoperative rehabilitation center. Over 50% of the cost of care of a total joint replacement is hospital stay and postoperative rehabilitative services. Historically, over the past 30 years, there has been a transition from prolonged hospital stays after the arthroplasty procedure to decreasing length of stay but extended stays at a rehabilitative center. Now there has been an evolution to less than 3 days in the hospital with 80% going home.

The next step is already occurring in some specialty centers is outpatient total joint replacement. In fact, over the period from 2007-2011 there has been a significant increase in total hip(37%), total knee(17%) arthroplasty performed on an outpatient basis.(1) Partial knee replacements are routinely done in outpatient ambulatory centers.

This is occurring because orthopedic specialists in this area have essentially made it happen through our improved understating of the episode of care for these selected patients. Rapid recovery protocols have evolved over the past decade. As a result this has reduced the hospital length of stay, and reduce the episode of care cost. (2)

The question was asked can we do this safely, and efficiently, while reducing cost and risk to the patient. The answer is a resounding yes! The current hospital based system may not be the safest, most effective and efficient, cost saving, and risk averting way to treat our healthy active arthritic patients. We our treating younger, more active, healthier patients that may not require traditional based hospital care.

While a majority of surgery today has evolved to the ambulatory surgery centers total joints have lagged behind and maybe for good reason. It is only now that our understanding of the process has enabled us to proceed with outpatient total joint surgery effectively. It has required both systematic and clinical changes in how we approach the arthroplasty patient. By creating a team philosophy, streamlining protocols, patients recover faster and safer with better outcomes. (3)

It has to be performed “perfectly”. The criteria for success is multifactorial. It involves patient selection, with only the healthiest patients being chosen.(4) Patient education preoperatively is essential starting in the office and continuing with total joint classes specific for outpatient surgery. The patient should be highly motivated, proactive and take ‘ownership of the process’.

The operation is orchestrated harmoniously with an efficient team. This limits operative time, anesthetic exposure, blood loss, soft tissue inflammation. Anesthesia and peri-operative medications are essential in controlling pain, confusion, postoperative nausea, urinary retention, and ileus. The recent advent of regional blocks and longer acting local anesthetic infiltrative agents have reduced pain significantly.(5) Blood conservation techniques have lessened the need for blood transfusions. Post-operatively early mobilization with physical therapy, mechanical and

chemical prophylaxis reduced the risk of venous thrombosis. All of these processes have to be in place to make it an effective and safe event. Ideally the role is to transition to home without any complications that require readmission.

Ambulatory centers that engage in this practice require a highly motivated peri-operative team with a patient-centered focus, appropriate instrumentation, 24 hrs. nursing service for over night stays, ability to transfer to near by hospital if necessary, and postoperative follow up care over the next 48-72 hrs.

The most utilization thus far has been with partial knee replacement (UKA). This surgical procedure replaces only a portion of the knee. Specifically, the compartment that is involved with osteoarthritis. This can be medial, lateral, and or patellofemoral. The procedure is minimally invasive, bone preserving, less time to perform, shorter recovery, and much less post-operative risk. Because there ligaments and contra-lateral compartment is untouched the knee feels more natural. Regarded as an alternative to total knee replacement it accounts for approximately 10-20% of patients with knee arthritis.

We have performed outpatient (UKA) at our Orthopedic Associates Surgery Center facility in Rocky Hill over the past year. Most recently we have been using a robotic computer navigation system called *Navio* to improve the alignment, sizing of implant, and stability throughout range of motion of the knee. In studies it has shown to be an effective tool in enhancing all these parameters over traditional methods.(6) Thus far it has been quite successful.

So are we ready? The answer is probably; but we should temper our enthusiasm and proceed with cautious optimism. While outpatient total joint replacement is still a limited phenomenon it is gaining momentum. Short term data is promising, however, there is no long term data to draw any conclusions. There will certainly still be a role for hospitals in the care of a majority of our patients in the future.

Attention to details: patient selection, standardization of the process, maintaining a highly efficient perioperative team will increase our chance of success. It will happen. It just has to be done "perfectly".

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