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Lawsuits After Primary and Revision Total Hip Arthroplasties: A Malpractice Claims Analysis

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ABSTRACT

Background: As the prevalence of total hip arthroplasty (THA) expands, so too will complications and patient dissatisfaction. The goal of this study was to identify the common etiologies of malpractice suits and costs of claims after primary and revision THAs.

Methods: Analysis of 115 malpractice claims filed for alleged neglectful primary and revision THA surgeries by orthopedic surgeons insured by a large New York state malpractice carrier between 1983 and 2011.

Results: The incidence of malpractice claims filed for negligent THA procedures is only 0.15% per year in our population. In primary cases, nerve injury (“foot drop”) was the most frequent allegation with 27 claims. Negligent surgery causing dislocation was alleged in 18 and leg length discrepancy in 14. Medical complications were also reported, including 3 thromboembolic events and 6 deaths. In revision cases, dislocation and infection were the most common source of suits. The average indemnity payment was \$386,153 and the largest single settlement was \$4.1 million for an arterial injury resulting in amputation after a primary hip replacement. The average litigation cost to the insurer was \$61,833.

Conclusion: Nerve injury, dislocation, and leg length discrepancy are the most common reason for malpractice after primary THA. Orthopedic surgeons should continue to focus on minimizing the occurrence of these complications while adequately incorporating details about the risks and limitations of surgery into their preoperative education.

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Total hip arthroplasty (THA) provides substantial improvement in quality of life and has been shown to be cost-effective [1,2] in comparison with other interventions. However, with a projected increase in THA [3,4], complications and need for revision will rise as well. Any complication can lead to patient discontent and as a result, spur malpractice allegations.

In general, orthopedic surgery is a high-malpractice risk surgical specialty. Between 1991 and 2005, one study analyzing the cases from a large professional liability insurer found that the proportion

of orthopedic surgeons facing a new claim reached approximately 15% per year with a little under 1/3 of suits leading to payouts. The mean payment was nearly \$250,000 [5]. Within the English National Health System (NHSLA), a total of \$321,695,072 was paid in adult orthopedic surgery related settlements for nearly 5 million orthopedic surgical procedures performed between 2000 and 2006; damages per case secondary to litigation after THA ranged from \$105,756 to \$311,344 [6]. In a study of claims in the NHSLA arising between 1995 and 2001, consisting of 2117 orthopedic surgery cases across all subspecialties, Kahn et al [7] concluded that the most common causes of claims were postoperative complications, wrongful diagnosis of the complication, inadequate consent, and incorrect-site surgery. We hypothesized that this would be similar in the subcategory of THA in New York state.

The goal of this study was to identify the most common reasons for malpractice suits filed in New York state after primary and revision THAs. Additional goals of this study were to investigate the costs of claims, indemnities rewarded, and overall trends and associations.

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Methods

All closed malpractice claims involving primary and revision THAs between 1983 and 2011 were provided by the Federation of Jewish Philanthropies Service Corporation (FOJP Service Corporation), New York, NY, an underwriter of medical professional liability insurance for a number of hospitals and health systems across New York. All claims alleged improper THA surgery and/or negligent postoperative care. All medical and surgical complaints in the claim data were collected and reviewed by an orthopedic surgeon specializing in hip arthroplasty and one orthopedic resident. All pertinent data provided by the malpractice carrier including intraoperative occurrences, in-hospital falls or medical complications, and postoperative complications were reviewed. Physician and patient confidentiality were maintained per the standard policies of the FOJP. As these human subject data were preexisting and unidentifiable, no institutional review board's approval was required.

Cases were identified from the FOJP using the International Classification of Diseases, Ninth Revision codes 996.40, 996.41, 996.42, 996.43, 996.44, 996.45, 996.46, 996.66, 905.3, 716.1, 733.42, 715.15, 715.25 (Table 1). Demographic information for patients included patient age and gender, date of loss, date of opening and closing of claim or suit, indemnity paid, litigation expenses, procedural codes, the admitting diagnosis, other relevant diagnoses, and detailed allegations. Adverse outcomes were grouped into intraoperative, in-hospital, or postdischarge complications. Intraoperative and acute orthopedic complications included nerve injury, vascular injury, wound complications, leg length discrepancy (LLD), acute periprosthetic fracture, in-hospital falls, or vascular injury. Orthopedic complications occurring or noted after discharge from the hospital included dislocation and instability, loosening, implant failure, and infection. Medical complications included deep vein thrombosis (DVT) and/or pulmonary embolism (PE), decubitus ulcers, cerebrovascular accident, myocardial infarction, transfusion reaction or transfusion-related disease transmission, dental injury, and death.

All cases made available for analysis were now closed. The legal expenses of the suit and the indemnities paid to the plaintiff were normalized to 2015 dollars on the basis of the consumer price index.

The method used to estimate the annual incidence of THA malpractice claims among orthopedic surgeons covered by FOJP was described by DeNoble et al [8]. The incidence of THAs in New York state was quantified using deidentified discharge data from the New York Statewide Planning and Research Cooperative System (SPARCS) database for 2014. This database included all discharge data from acute care and ambulatory surgery visits in nonfederal hospitals in New York state by year, with the most recent available from 2014. The population of orthopedic surgeons in New York state was extracted from the 2014 American Academy of Orthopaedic Surgeons census data, and the number of FOJP-insured orthopedic surgeons was provided by the FOJP. The annual incidence of THA lawsuits was then calculated based on these figures and study data from 2008 through 2013.

Results

One hundred and fifteen THA malpractice cases were identified in the carrier's database: 100 following primary THA and 15 following revision THA. Two primary cases and one revision case contained two separate allegations of malpractice. The AAOS 2014 census stated that there were 1647 orthopedic surgeons in New York state. FOJP provided the information that they insured 70 orthopedic surgeons in the New York city area, 4.2% of orthopedic

Table 1

ICD-9 Codes Used to Identify Malpractice Cases Involving Primary and Revision Total Knee Arthroplasty.

ICD-9 Code	Diagnosis
996.40	Mechanical complication of internal orthopedic device implant and graft
996.41	Mechanical loosening of prosthetic joint
996.42	Dislocation of prosthetic joint
996.43	Broken prosthetic joint implant
996.44	Periprosthetic fracture around prosthetic joint
996.45	Periprosthetic osteolysis
996.46	Articular bearing surface wear of prosthetic joint
996.66	Infection and inflammatory reaction due to internal joint prosthesis
716.1	Traumatic arthropathy
715.16	Osteoarthritis, localized, primary, knee
715.26	Osteoarthritis, localized, secondary, knee

ICD-9, International Classification of Diseases, Ninth Revision.

surgeons in the state. The SPARCS database identified 28,180 THAs performed New York state in 2014, approximately 1321 of which were performed by FOJP-insured physicians. Using the technique in DeNoble et al, between 2008 and 2013, there were claims relating to THA filed against FOJP physicians, a yearly rate of 0.15%. There were 70 female and 45 male patients, mean age at the time of surgery was 59.1 years (range 23–82 years). The mean time from surgery to case closure was 6.11 years and the range of time frame was 0.4 months to 14 years.

Postoperative sciatic nerve injury (“foot drop”) was the most frequent cause of alleged malpractice in primary THA, occurring in 27 claims. Negligent surgery leading to postoperative dislocation was alleged in 18 cases, LLD in 14, infection in 8, intraoperative fracture in 2, acute periprosthetic fractures in 1, loosening in 2, unspecified implant failure in 2, varus placement of implant in 1, and general dissatisfaction/improper surgery/long-term pain in 5. There were 2 vascular injuries during primary hip arthroplasty, one of which resulted in a bicompartamental knee arthroplasty and the other requiring further vascular bypass surgery but did well and was left with only a further foot drop. Underlying etiologies for patient dissatisfaction or long-term pain allegations included a retained drill bit, a retained drain, heterotopic ossification, and lack of surgeon.

Medical complications occurred in 20 cases including 6 postoperative deaths; 3 deaths were due to PE events and 3 were due to other medical complications, including 1 secondary to a postoperative myocardial infarction. There was 1 urologic complication, 2 patients who reported being infected with hepatitis C after a postoperative blood transfusion, 2 dental injuries, and 1 case of parotid cellulitis (Table 2).

Table 2

Medical Complications After Primary and Revision Total Hip Arthroplasties.

Medical Complication	Primary	Revision
Dental injury	2	
Hepatitis C transmission from blood transfusion	2	
Missed cancer diagnosis	2	
Skin burn (cautery, skin prep)	2	1
Decubitus ulcer	1	
Pseudomembranous colitis	1	
Death (non-DVT/PE)	3	1
Urologic complaint	1	
Myocardial infarction	1	
Parotid cellulitis	1	
Brachial plexus palsy		1
Transfusion reaction		1

DVT, deep vein thrombosis; PE, pulmonary embolism.

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