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Public Perceptions About Nerve Injury From Hip Replacement Surgery

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ABSTRACT

Background: Nerve injury is a distressing complication for patients and surgeons that is difficult and frustrating to understand and treat. Whether the standard of care has been met when this complication occurs is a common question for both patients and surgeons but there is no information about how the public feels about nerve injury.

Methods: The author surveyed 1409 individuals insured in a senior products health program using a 22-item questionnaire about nerve injury during hip replacement. Participants were given written descriptions of total hip arthroplasty, nerve injury, and the standard of care.

Results: Seventeen percent of participants indicated that a direct nerve laceration is a standard of care violation. Respectively, 98%, 100%, 94%, and 97% of participants responded that the standard of care requires the surgeon to promptly identify the nerve injury, completely inform the patient about the nature and prognosis of the injury, and present options for treating the nerve injury. Eleven percent indicated that they lack trust in health care. Participants with distrust were more likely to find a standard of care violation than other participants. Women and non-white participants responded more commonly that a standard of care violation occurred with the nerve injury. Income level, age, prior surgery, and educational background were not differentiating factors as to whether participants found that a violation of the standard of care had occurred.

Conclusion: Most participants would accept the possibility of nerve injury during hip replacement but they would expect to be informed in advance that this complication is possible.

There is a strong interest in patient injuries and adverse outcomes attributed to medical and surgical treatments. Intraoperative injuries have a wide range of severity. Nerve injuries from surgery are distressing for both the patient and surgeon. Infection is the most dreaded complication of hip replacement surgery but nerve injuries are also associated with poorer outcomes and have a negative financial impact on the cost of care [1,2]. It is not known how many direct and indirect nerve injuries occur but it is known that they are underreported [1]. A study of busy general surgeons in Boston found that in the preceding year, 80% of surgeons had at least one intraoperative injury, for a 1.5%-2% incidence of injury during a surgical procedure [3]. Most of the injuries were lacerations. Similar information is not available for orthopedic surgeons. Most adverse operative events can be attributed to patient risk factor(s) or remain unexplained [4,5]. Some adverse events are directly attributable to a surgeon's technical or judgmental error [6–8]. Obviously, patients are most affected but surgeons are also negatively affected; 84% of surgeons reported negative emotions after adverse intraoperative events [3].

Quality and safety systems have not effectively shifted from assigning blame to solving safety issues. The necessarily confidential nature of peer review does not open this process to patients. Defining what is an expected part of the surgery vs a surgical complication and transparency about reporting complications remain barriers to understanding surgical injuries. Surgeons' fear of litigation and patients' misunderstanding of the standard of care further erode the resiliency and adaptation necessary to make the best recovery from an intraoperative injury. A clear path to fully understanding the basis for intraoperative injury and its emotional response remains elusive.

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Table 1
Demographic Data for 1409 Study Participants.

Variable	Result
Age (y)	66 (40-84)
Gender	
Male	620 (44)
Female	789 (56)
Race	
White	1042 (74)
Black	127 (9)
Asian	113 (8)
Hispanic	99 (7)
Other	28 (2)
Education	
Less than high school	15 (1)
High school or GED	211 (15)
Some college	437 (31)
College degree	620 (44)
Professional degree	127 (9)
Household income	
High (>$60,000)	775 (55)
Low/normal (<$60,000)	634 (45)

Data are expressed as median (range) or n (%).
GED, General Equivalency Diploma.

Table 2
Responses of 1409 Participants to Survey Statements.

Statements	Responses, n (%)
1. I would have hip replacement surgery if I needed it, accepting a 10% possibility of nerve injury	1339 (95)
2. I would have hip replacement surgery if I needed it, accepting a 20% possibility of nerve injury	902 (64)
3. Directly damaging (cutting, crushing, or suturing) a major nerve during surgery falls below the standard of care	240 (17)
4. Indirectly damaging (stretching/burning) a major nerve falls below the standard of care	127 (9)
5. Apologizing or admitting the nerve injury means the care was below the standard of care	70 (5)
6. Not recognizing the presence of a nerve injury falls below the standard of care	1381 (98)
7. Not warning a patient of the possibility of nerve injury falls below the standard of care	1394 (99)
8. Not pursuing remedial measures to limit the effects of a nerve injury falls below the standard of care	1367 (97)
9. I would change surgeon if I sustained a major nerve injury during hip replacement	1113 (59)
10. I would change surgeon if I lost trust but not just because of complications	1353 (96)
11. Patients should be told the reasons, if known, for the nerve injury	1409 (100)
12. Patients should be told the recovery potential, if known, for the nerve injury	1324 (94)
13. Patients should be told the options for additional treatment	1395 (99)
14. Some risk issues with surgery are beyond the control of the surgeon	1381 (94)
15. Surgeons usually hide their mistakes rather than disclose them	85 (6)
16. Any accident or mistake in surgery means the surgeon has violated the standard of care	155 (11)
17. Surgeons do not always know what they don't know (incompetent)	141 (10)
18. Surgical errors are common	70 (5)
19. Patients with risk factors for complications should accept the higher risks of surgery	1296 (92)
20. Sometimes the reasons for complications are not known	1239 (88)
21. I would file a claim if I was injured and I thought the surgeon was at fault	268 (19)
22. A no-fault system would be a better method than the current fault-based system for compensating a patient for a nerve injury	479 (34)

The general public's attitude about an intraoperative injury is unknown. Both surgeons and patients may benefit from knowing the general public's view of surgical complications and understanding of the standard of care. Increasingly, surveys of the public are performed to determine attitudes about surgery and trust in healthcare [9–11]. Both the patient and surgeon need to emotionally process the complication itself as well as each other's reaction.

This study asked a sample of the general public, rather than injured patients, about the specific intraoperative adverse event of a nerve injury during total hip arthroplasty (THA). The goal is to determine their perspectives about how the standard of care applies. Secondary goals are to assess their views of the role of communication and continuing care after the injury, as well as their trust of healthcare and surgeons.

Materials and Methods

This study was conducted among a group of insured individuals representing the general public and a potential future patient base about the adverse event of nerve injury during THA. Demographic information such as age, gender, education level, healthcare distrust, ethnic background, household income, and previous surgery was obtained (Table 1). The scenario of a THA and nerve injury was chosen because it is important and not understood fully. This study was conducted in 2012 and participants provided their written consent. Institutional Review Board approval was not required. The study participants were individuals who were insured for Medicare supplemental insurance, home healthcare, nursing home care, and/or long-term care (Senior Products Health Plans, Seattle, WA). These products are termed “senior health care products” and participants were from 40 to 80 years of age when they purchased their coverage. The target enrollment was 2000 randomly selected survey participants. All individuals enrolled in these health plans who were between 40 and 80 years of age were invited to participate. The survey was provided to participants by mail, electronically, and in person. Follow-up telephone calls were made by the study intake coordinator to encourage participation and answer questions. Those who responded to the survey were offered $50 compensation for their participation. Participants were asked to agree/disagree with 22 statements about nerve injury during THA (Table 2). Eight versions of the questions were developed in a cross-randomized design. Prior to answering the 22 statements/questions, participants were given the following written information about THA, nerve injury, and standard of care.

Total Hip Arthroplasty

A hip replacement is performed when there is pain and limitations in the ability to perform the activities of daily living. The hip pain is significant and not relieved by medication and therapy. A patient needing a hip replacement has trouble walking and getting around. A hip replacement involves major surgery and there are risks of infection, nerve damage, bleeding, and medical complications. Most hip replacement procedures are successful but complications occur and some patients are at higher risk than others for the procedure.

Nerve Injury

A severe nerve injury means there is functional loss, sensory loss, and pain that is permanent. The functional loss means there is a total or partial paralysis. For the femoral nerve, this means the inability to extend the knee; for the sciatic nerve, this means the inability to use the muscles of the foot and ankle. For the obturator nerve, this means the inability to bring the thighs together. There is