The Spin Move: A Reliable and Cost-Effective Gowning Technique for the 21st Century

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Abstract: Operating room efficiency (ORE) and utilization are considered one of the most crucial components of quality improvement in every hospital. We introduced a new gowning technique that could optimize ORE. The Spin Move quickly and efficiently wraps a surgical gown around the surgeon's body. This saves the operative time expended through the traditional gowning techniques. In the Spin Move, while the surgeon is approaching the scrub nurse, he or she uses the left heel as the fulcrum. The torque, which is generated by twisting the right leg around the left leg, helps the surgeon to close the gown as quickly and safely as possible. From 2003 to 2012, the Spin Move was performed in 1,725 consecutive procedures with no complication. The estimated average time was 5.3 and 7.8 seconds for the Spin Move and traditional gowning, respectively. The estimated time saving for the senior author during this period was 71.875 minutes. Approximately 20,000 orthopaedic surgeons practice in the United States. If this technique had been used, 23,958 hours could have been saved. The money saving could have been $14,374,800.00 (23,958 hours × $600/operating room hour) during the past 10 years. The Spin Move is easy to perform and reproducible. It saves operating room time and increases ORE.

Minimizing the cost while maintaining the same quality of care is a challenge.[1-5] Gowning is an integral part of all surgical procedures.[6] Any efforts should be made to safely decrease the time a patient spends in the operating room (OR) to increase operating room efficiency (ORE).[1,4] Orthopaedists should increase their knowledge of quality improvement and take more responsibility.[7]

We introduced a new gowning technique; the Spin Move quickly and efficiently wraps a surgical gown around the surgeon's body. This saves the operative time expended through the traditional gowning techniques and should optimize the ORE.

Surgical Technique

In the Spin Move, while the surgeon is approaching the scrub nurse, he or she uses the left lower extremity as the fulcrum. The torque, which is generated by twisting the right leg around the left leg, helps the surgeon to close the gown as quickly and safely as possible. The Spin Move is a continuous smooth movement. We divided it into 3 steps for learning purposes (Video 1, Table 1):

1. Approach—Left heel contact is made with simultaneous passing of the strap to the scrub nurse by the right hand (Fig 1; Video 1, 1 minute 16 seconds).
2. Twist—The right leg is twisted around the left leg. At the end of this step, the right foot is perpendicular to the left foot (Fig 2; Video 1, 1 minute 18 seconds).
3. Spin—Spinning is performed on the left toes and right heel. During this step, the remnant of strap is transferred from the left hand to the right hand, so the surgeon could easily grab the strap from the scrub nurse by the left hand and tie the gown (Fig 3; Video 1, 1 minute 19 seconds).

Contraindications to the Spin Move for the surgeon include anterior cruciate ligament deficiency, femoroacetabular impingement, hip labral tear, significant decreased range of motion of the hip joint (>50% compared with lateral side), meniscus tear, ankle instability, low-back pain, vertigo, and a general lack of coordination such that the surgeon would be a danger to himself or herself or to others.

From 2003 to 2012, the Spin Move was performed in 1,725 consecutive procedures with no complication

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Table 1. The Spin Move

	Description	Time in Video 1
Step 1: Approach (Fig 1)	The left heel is the anchor; the right hand passes the strap.	1 min 16 s
Step 2: Twist (Fig 2)	The left heel is the anchor; the right leg is twisted round the left leg. At the end of this step, the right foot is perpendicular to the left foot.	1 min 18 s
Step 3: Spin (Fig 3)	The right heel and left toes are the anchor of rotation; the remnant of the strap is transferred from the left hand to right hand, so the surgeon could easily grab the strap from the scrub nurse by the left hand and tie the gown.	1 min 19 s

reported. The Kimberly-Clark surgical gown (Irving, TX) was used during the operations. The estimated average time was 5.3 and 7.8 seconds for the Spin Move and traditional gowning, respectively. The estimated time saving for the senior author during this period was 71.875 minutes (2.5 seconds × 1,725 cases).

Approximately 20,000 orthopaedic surgeons currently practice in the United States. Assuming a stable number of surgeons, if all did the Spin Move for a similar number of cases, the time savings would be 20,000 × 71.875 minutes = 1,437,500 minutes (23,958 hours). If the average OR expense for an hour is considered $600, then the money saving could have been $14,374,800.00 (23,958 hours × $600/OR hour) during the past 10 years. Moreover, if we calculate the money saving for all the 4 million surgeons around the world (assuming the same number of surgical cases and same OR cost), it would have been a staggering savings of $2,875,000,000.00 over the past 10 years.

Discussion

Efficient and effective health care is expected from orthopaedic surgeons. Despite the fact that patient satisfaction is affected by the OR functions and utilization, surgeons are usually not involved in the decision making for quality improvement.[7,8] ORE and utilization are considered one of the most crucial components of quality improvement in every hospital.[1,8] Cost saving is important to allow access to care for all patients. Small changes in operative time could drastically increase the OR throughput.[2]

Surgical gowning takes place promptly after hand disinfection and is one of the most important steps in the perioperative practice.[4] The torque during the Spin Move, which is generated by twisting the right leg around the left leg, helps the surgeon to close the gown as quickly and safely as possible. In this study, surgeons saved 2.5 seconds per surgery by converting from traditional gowning to the Spin Move. The impact of

Fig 1. Step 1: approach.

Fig 2. Step 2: twist.

Fig 3. Step 3: spin.

this time saving could be huge for society if the Spin Move is implemented for all surgeons. Furthermore, if we imagine all the 4 million surgeons in the world using this technique, then the cost saving would be beyond belief.

The Spin Move requires no capital outlay, is easy to perform, and is reproducible. The limitation of the technique might be that it may take a few weeks to get used to the Spin Move. No complication has been reported. It may also increase the surgeon's endorphin level, which could improve surgical dexterity and efficiency and which is especially important in arthroscopic surgery. However, further research with blood sampling, polymerase chain reaction, and electroencephalogram monitoring of the surgeon is needed to investigate this. The limitation of this study is that it was done by one surgeon and other surgeons' coordination could potentially be different. Although prospective randomized controlled trials are necessary for definitive recommendations regarding the ultimate safety of the Spin Move, this study showed that ORE could be increased and health care saving obtained by implementing the Spin Move.

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