Surgeon Volume

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WRIN Research Briefs
Surgeon Volume
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Key Implications

- There are now several studies showing conflicting results in terms of the relationship between the rate of complications after surgery for urinary incontinence and the experience of the surgeons performing these anti-incontinence surgical procedures.

- The study that showed a positive correlation between increasing surgical experience and lower complications after anti-incontinence surgery was conducted among a group of surgeons who as a group had high volume. The two studies that failed to show a relationship, our study and another among Medicare beneficiaries, were conducted among surgeons who overall as a group had low anti-incontinence surgical volume.

- The suggestion from our study and the prior studies done, when taken together, is that increasing surgical volume may only lower complication rates when the overall surgical volume of the surgeons being studied is high.

Background

After childbirth, it is quite common for women to experience stress urinary incontinence, or SUI. SUI is the unintentional loss of urine from the bladder when stress is placed upon it through normal activity and often occurs after childbirth. Because childbirth often weakens muscles around the bladder, women are often not able to prevent urine leakage and must undergo treatment for SUI. As a result, urinary slings are a common surgical treatment for SUI and are expected to increase by 47%, with over 310,000 women receiving them annually.

Although slings are becoming a more prominent treatment for women with SUI, few studies have examined the effect that the increased volume of sling procedures is having upon surgeons' surgical outcomes after performing sling procedures. The goal of our study was to compare twelve-month post-procedure complication rates for surgeons who completed a high volume of sling procedures versus surgeons who completed a low volume of sling procedures within military treatment facilities. Because surgeons who complete more sling procedures would theoretically have more familiarity with the procedure, we predict that the surgeons with high volumes of sling procedures will have lower twelve-month post-procedure complication rates.

Research Design

Our study examined medical records of over 1,600 women enrolled in the military healthcare system (TRICARE Prime) who underwent either an outpatient or inpatient sling placement for SUI between January 1, 2011, and December 31, 2013. We used these medical records to identify the types of sling procedures these women underwent and whether they suffered any post-surgery complications in the year following their procedures.

In addition, using these medical records, we also identified 348 surgeons in the TRICARE Prime healthcare system who performed sling procedures during the study period. We characterized surgeons who performed more than thirteen surgeries in the two years preceding our study period as “high volume” and those performed fewer than three surgeries as “low volume” and compared their twelve-month complication rates during our study period.

We accounted for issues such as age, race, and surgeon specialty during our statistical analysis and compared the surgical outcomes of high volume surgeons against the outcomes of low volume surgeons to ascertain if there were statistically significant differences in outcomes based upon surgeon volume.
Key Findings

We found that, during our study period, the 30 surgeons we had classified as high volume performed almost as many slings (638) as the 256 surgeons we had classified as low volume (664). Overall, 45.5% of those undergoing sling procedures had at least one postoperative complication. In our adjusted statistical analyses, there was no statistically significant difference, by volume, in the odds of at least one post-procedure complication, such as urologic infections. Also, there were no statistically significant differences between high-volume and low-volume surgeons with post procedure complications, such as treatment failure or needing additional procedures.

Discussion

We found no statistically significant association between surgeon sling volume and twelve-month postoperative complications for women undergoing sling procedures within the military healthcare system (TRICARE Prime). Our findings complement those from other studies that performed similar investigations in the United States’ Medicare population and the Canadian healthcare system as well. These findings are interesting, given that the populations are so different, yet the results are similar.

However, it may be hard to see a relationship between surgeon volume and outcomes if the overwhelming majority of surgeons are low volume. Because higher surgeon volume is linked to improved outcomes in other studies, perhaps our threshold for defining high-volume surgeons was too low in our study. We need to continue to investigate a wide variety of complications and the threshold at which individual complications decrease so that medical authorities can continue to look to specialty organizations to guide community standards of surgical competence and quality patient care.

These studies will likely need to be carried out using other national bases that capture data from an increased number of high-volume and low-volume surgeons because most randomized controlled trials set a minimum surgeon volume but do not track surgeon volume over the course of the trial. Increasing this kind of tracking will not only make these types of studies more informative, but will, ultimately, help researchers better understand ways to improve patient care.

Because childbirth often weakens muscles around the bladder, women are often not able to prevent urine leakage and must undergo treatment for SUI.

Learn More About This Brief

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The Study:

The Brief: