

# Hysterectomy Cost: Operative Time Has Big Role

BY MIRIAM E. TUCKER

FROM THE ANNUAL MEETING  
OF THE AAGL

LAS VEGAS – Vaginal hysterectomy was the least costly approach in one tertiary hospital's experience with over a thousand cases.

Operative time was the greatest contributor to overall cost among 1,067 consecutive hysterectomy procedures performed in 2009 at Brigham and Women's Hospital, an urban academic tertiary care center. The analysis examined operative and overall costs for abdominal, laparoscopic, vaginal, and robotic procedures, including about 150 performed for ovarian cancer, said Dr. Kelly N. Wright, a fellow at the hospital and Harvard Medical School, both in Boston.

Of the 1,067 total hysterectomies, 36% were abdominal, 13% vaginal, 45% laparoscopic, and 6% robotic. Operating time was the longest for robotic (267 minutes) and shortest for vaginal hysterectomy (155 minutes). Intraoperative complications were most common for abdominal (8.8%) and least common with robotic hys-

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**Major Finding:** Operative time was strongly correlated with operative cost, with robotic hysterectomy being the most expensive at \$46,065 and vaginal the least expensive at \$26,619.

**Data Source:** A retrospective cohort analysis of 1,067 consecutive hysterectomies performed at a single institution.

**Disclosures:** Dr. Wright said she had no financial disclosures.

terectomy (just 0.4%). Complication rates did not vary significantly among the three minimally invasive methods, Dr. Wright said at the meeting.

Operative time was strongly correlated with operative cost, with robotic hysterectomy being the most expensive (\$46,065) and vaginal the least (\$26,619). In all, operative time accounted for 96% of the variation in operative costs, and charges based on operative time were up to 190-fold greater than were operative charges from equipment costs.

Other patient characteristics that significantly influ-

enced operative time were body mass index, adhesions, and cancer indications, whereas uterine weight and age did not influence operative time.

A "cost minimization analysis" was done using cost to society, which included inpatient stay, lost wages, and time to recovery, in addition to the operative costs. This time, abdominal hysterectomy was the most costly (\$58,959) because of the significantly greater length of stay (3.6 days vs. 1.2-1.3 days for the other methods). Vaginal hysterectomy was again the least expensive at \$34,933.

But the cost of laparoscopic hysterectomy approached that of vaginal when it was performed in less than 140 minutes, and laparoscopic hysterectomy always was less costly than either abdominal or robotic, Dr. Wright pointed out.

Conversion of all the abdominal hysterectomies done at Brigham and Women's Hospital in 2009 to laparoscopic would have saved over \$7.8 billion, and conversion to robotic, over \$1.9 billion. On the other hand, if all the laparoscopic procedures had been done robotically, \$934 million would have been lost. ■

## Robotic Hysterectomy Is Comparable to Other Approaches

BY MIRIAM E. TUCKER

FROM THE ANNUAL MEETING  
OF THE AAGL

LAS VEGAS – Robotic-assisted total laparoscopic hysterectomy produced comparable outcomes to other minimally invasive methods of hysterectomy without increasing the risk for conversion or complications in a retrospective chart analysis of nearly 300 women.

The data suggested that robotic hysterectomy (RH) may even be associated with a slightly lower risk for blood loss and minor complications, and may be particularly useful in patients with large uterine size or a high body mass index. "Thus, the robot provides an additional tool, allowing a minimally invasive approach to hysterectomies in cases when a surgeon may be tempted to resort to an abdominal approach," said Dr. Mona E. Orady of the Henry Ford Health System, Detroit.

The study population included 297 women who underwent any form of minimally invasive hysterectomy between January 2006 and May 2010 at one of two Henry Ford campuses. Emergent and supracervical hysterectomies were excluded, as were hysterectomies performed for malignancy or concomitantly with urogynecologic procedures.

In all, 135 patients underwent RH procedures and 162 had nonrobotic minimally invasive procedures, including total laparoscopic hysterectomy (TLH), vaginal hysterectomy (VH), or laparoscopic-assisted vaginal hysterectomy (LAVH). The two groups did not differ in age (mean, 45 years), and about two-thirds of each group were black. Body mass index was comparable in the two groups, with fewer than 25% of all patients being at or below normal weight.

However, patients in the robotic group did have significantly larger uteri (mean, 262 g), compared with 197 g for the nonrobotic group.

Procedure duration was significantly increased

with RH, by a median of 25 minutes longer than the other minimally invasive procedures combined. However, the difference in duration between RH and conventional TLH did not differ significantly (169 vs. 194 minutes). The main difference was in comparison with VH, which had a median of just 98.5 minutes.

Estimated blood loss was significantly less for RH (median, just 50 mL), compared with all of the nonrobotic hysterectomy procedures (150 mL for both TLH and VH; 250 mL for LAVH). This coincided with drops in hemoglobin, "thus confirming that the findings are real and not just perceived," she noted.

Overall length of stay was a median of 1 day for the robotic group and all other minimally invasive groups except LAVH, which had a

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**Data Source:** A retrospective cohort analysis of 297 women undergoing minimally invasive total hysterectomies.

**Disclosures:** Dr. Orady said she had no relevant-financial disclosures.

median stay of 2 days.

Major complication rates (defined as any visceral injury or complication that caused increased hospital stay, readmission, or reoperation) were nearly the same between RH and the other minimally invasive procedures at 11.1% and 10.5%, respectively. However, there were significantly fewer minor complications with RH, compared with the other procedures (8.9% vs. 21.6%).

All attempted robotic TLH procedures were completed, even among obese patients and those with very large uteri. In contrast, three conversions to abdominal procedures occurred with the other minimally invasive procedures. ■

## For Endometriotic Pain: Mirena Plus Danazol

BY BRUCE JANCIN

FROM THE ANNUAL MEETING  
OF THE AMERICAN SOCIETY  
FOR REPRODUCTIVE MEDICINE

DENVER – Daily self-administered vaginal danazol effectively decreased pain symptoms caused by rectovaginal endometriosis that persisted despite insertion of a levonorgestrel-releasing IUD, a small, prospective, self-controlled pilot study has shown.

The levonorgestrel-releasing IUD (Mirena) is indicated as a contraceptive, and also to treat heavy periods in women who choose to have an IUD. However, the device is also seeing expanding off-label use as a treatment for endometriosis. Several studies indicate the hormone-releasing IUD is effective at improving endometriosis-related pain symptoms in many women who don't want to resort to oral or injectable medications (Contraception 2010; 81:117-22). But for the one-quarter to one-third of patients who request device removal after 6 months because of inadequate pain relief, what's the next option? That was the question Dr. Simone Ferrero and his colleagues set out to answer. He reported on 15 women with rectovaginal endometriosis and chronic pelvic pain, deep dyspareunia, dysmenorrhea, and difficulty in defecating who remained symptomatic despite insertion of Mirena. At the time of study enrollment, they had been on the levonorgestrel-releasing IUD for a mean of 8.2 months

and indicated they were either "dissatisfied" or "very dissatisfied" with it. They were then placed on vaginal danazol (Danocrine) at 100 mg/day.

After 3 months of dual therapy, patients reported a significant progressive decrease in mean pain scores on a visual analog scale for chronic pelvic pain, dysmenorrhea, and dyspareunia compared with baseline, according to Dr. Ferrero of San Martino Hospital and the University of Genoa (Italy).

After 6 months, the intensity of all of these symptoms was further diminished, and the reduction in difficulty in defecation had achieved significance. The volume of rectovaginal nodules was significantly reduced compared with baseline.

The most common treatment-related adverse events were seborrhea, acne, and/or oily hair in four patients, headache in three, weight gain in excess of 3 kg in two women, and vaginal irritation in two. No adverse effects were noted in lipid profiles, liver function, or clotting factors.

Twelve of the 15 subjects pronounced themselves satisfied with the dual therapy and opted to continue with it after completing the 6-month study. The major remaining question unanswered by this or other studies is whether the improvement in pain symptoms will continue for the entire 5-year life of the coil, he noted.

He said he had no relevant financial conflicts of interest. ■