

Conclusion: Previous cesarean section does not increase the risk of bladder injury in laparoscopic hysterectomy. TLH is associated with less blood loss than LAVH.

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Total Laparoscopic Hysterectomy: Postoperative Vaginal Cuff Complications

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Study Objective: To review cuff related complications in a series of total laparoscopic hysterectomies incorporating the use of a double layer closure of the vaginal cuff.

Design: In this retrospective cohort study, all cuff related complications over a 13.5 year period were recorded and analyzed.

Setting: Four bay area hospitals, under supervision of the Sequoia Hospital IRB.

Patients: Out of a total of 1337 patients having simple or radical laparoscopic hysterectomy employing a two layer vaginal cuff closure, 18 patients (1.3%), experienced vaginal cuff complications over 13.5 years.

Intervention: A two layer vaginal cuff closure was employed, closing first the pubocervical fascia, uterosacral ligaments and vaginal epithelium in a running 2-0 suture of polydioxane, then closing the bladder flap over the vaginal raw edge.

Measurements and Main Results: Twelve patients (.9%) had vaginal cuff bleeding, and 10 required re-operation. Five cases developed during the initial 23 hour hospitalization: 3 patients were taken back to the operating room from the recovery room, and 2 began bleeding their hospital room the next morning, one from an unsutured vaginal laceration from morcellation. The other 7 bleeding cases were from small cuff arterioles that developed on post operative days 4, 7, 14, 15, 16, 18, and 52. Five patients (.4%) had vaginal dehiscence after sexual activity on days 30, 42, 44, 80, and 133, and 3 required suture closure. All have healed well. The vaginal cuff closure technique was changed to a two layer closure after the last patient with dehiscence, and no cases of dehiscence have occurred since then, despite some patients having penetration against medical advice before the six-week post-operative cuff examination.

Conclusion: A two-layer vaginal closure incorporating the pubocervical fascia and uterosacral ligaments with the vaginal epithelium and covering the vaginal cuff with the bladder flap may be valuable in reducing postoperative vaginal cuff complication rates.

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Retrospective Study of Single Incision Total Laparoscopic Hysterectomy Versus Traditional Total Laparoscopic Hysterectomy: The Vanderbilt Experience

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Study Objective: To determine if there was a difference in surgical and postoperative outcomes between single incision total laparoscopic hysterectomy (TLH), traditional TLH, and robotic assisted TLH.

Design: Retrospective cohort study.

Setting: Academic teaching hospital.

Patients: Women undergoing TLH because of benign indications.

Intervention: Total laparoscopic hysterectomy with or without adnexectomy.

Measurements and Main Results: Seventy-three patients received a single incision total laparoscopic hysterectomy, 145 received a traditional total laparoscopic hysterectomy, and 23 robotic assisted TLH between September 2009 to March 2011. The patient demographics were equivalent in all groups. There was a decreased conversion to laparotomy

and major complication rate in the single incision TLH group and robotic assisted TLH group, but otherwise the groups were not significantly different from one another. Narcotic use postoperatively and the length of hospital stay was greatest the robotic assisted TLH group.

Conclusion: Single incision TLH is at least equivalent to traditional TLH and robotic assisted TLH. There was a decreased conversion to laparotomy and major complication rate in the single incision LSH and robotic group, but this could be a function that all the single incision LSHs were performed by attendings with advanced laparoscopic training and that there was decreased resident participation in the single incision TLH and robotic assisted TLH group. There was a greater need for narcotics in the robotic assisted TLH in the hospital prior to discharge, which could be because the trochars are more commonly placed in the upper abdomen and are larger incisions than traditional TLH trochar incisions. Anecdotally there was decreased narcotic use postoperatively, with most patients off narcotics within 72 hours, and a decreased time to routine activities with the single incision group. This prompts a prospective study to evaluate postoperative pain.

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National Trends and Outcomes for Hysterectomy Done for Leiomyoma

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Study Objective: To describe practice patterns and outcomes for all routes of hysterectomy performed for fibroids in the United States.

Design: Inpatient hysterectomies for fibroids, including abdominal (TAH), total laparoscopic (TLH), laparoscopic-assisted vaginal (LAVH), and vaginal (TVH) from 2006-2008 were studied using the HCUP-NIS nationwide hospital discharge database. For each year, the number of each procedure, demographics, length of stay (LOS), total charges, and complications was evaluated.

Setting: Inpatient hospital database.

Patients: All patients in the NIS database undergoing hysterectomy for fibroids by any route.

Measurements and Main Results: The average age of patients was 45, with 55% being Caucasian and 80% having private insurance. From 2006-2008, inpatient hysterectomies increased dramatically for TLH: 179 to 1,223 (+583%) and for TAH 20,558 to 22,300 (+8%) while decreasing for TVH: 4,344 to 3,346 (-23%), and LAVH: 3,889 to 3,675 (-5.5%). Mean LOS decreased from 2.4 to 2.3 days. Mean total charges increased from \$17,297 to \$21,244.03, with TLH costing the most, going from \$21,870 to \$23,223. TLH was a significant predictor of ureteral and bladder injury, but the odds of these injuries decreased over time (by 2008: ureteral injury OR 25.59, 95% CI 2.32-282.42, p=0.008; bladder injury OR 2.08 95% CI 1.40-3.09, p < 0.001). TAH was associated with wound infection, increasing to OR 1.80 (95% CI 1.21-2.81, p=0.004). TAH was also associated with hemorrhage, but decreased to 1.24 (95% CI 1.02-1.50, p < 0.001). TVH predicted shorter LOS (OR 0.171, 95% CI 0.13-0.22, P < 0.001). The presence of any co-morbidity significantly increased the rate of wound infection and LOS.

Conclusion: This study demonstrates that rates of TLH increased from 2006-2008, while decreasing most notably for TVH. Minimally invasive surgery has well-known benefits, but TLH specifically incurs the greatest cost and poses the greatest risk for ureteral and bladder injury. These injuries decreased over time, perhaps indicating improving operator proficiency. Further assessments of outcomes and proficiency standards for TLH are needed, as new minimally invasive techniques are being rapidly adopted.