

potential as an inexpensive, easily accessible adhesion barrier in pelvic surgery. Increased adhesions in areas other than the hysterotomy site require further investigation.

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#### **LAPAROSCOPIC SURGERY IMPROVES OUTCOME AND DIAGNOSTIC ACCURACY IN UNEXPLAINED INFERTILITY.**

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**OBJECTIVE:** To determine the utility of laparoscopy for detection and resection/ablation of endometriosis in women with unexplained infertility (UI) trying to conceive.

**DESIGN:** Retrospective cohort study in an academic teaching hospital.

**MATERIALS AND METHODS:** This is a cohort study of women treated between February 2003 to March 2010 for UI. Subjects were included if the male partner had at least one normal semen analysis based on the WHO criteria and if she had regular cyclic menses and at least one patent fallopian tube. Women with a prior laparoscopy (L/S) or an existing diagnosis of endometriosis were excluded. Group I (n = 44) underwent diagnostic L/S while Group II (n = 32) did not. All surgery was performed at Greenville Hospital System by a Reproductive Endocrinologist with the goal of complete resection of all lesions. Cases were documented by video photography and histological confirmation, when possible. Endometriosis staging was based on the revised ASRM criteria. Pregnancy outcome in monitored cycles exclusive of IVF were compared in both groups for up to 1 year. Pregnancy was documented by serial hCG and vaginal ultrasound. Time to pregnancy was compared using Kaplan Meier survival curves.

**RESULTS:** The demographic characteristics were similar for age and BMI in each group. A successful, ongoing pregnancy was achieved in 26/44 women (59.1%) from Group I after L/S and in 6/32 (18.8%) from Group 2 (P = 0.004). At L/S, 42 of 44 (95.5%) patients had endometriosis (stage I, 9%; II, 54%; III, 24% and IV, 14%). The Kaplan Meier curves were not significantly different for stage I-II vs. III-IV disease.

**CONCLUSION:** UI is associated with a high prevalence of endometriosis. Laparoscopic surgery with attention to ablation and/or resection of all lesions provides a significant benefit for infertility and may help establish a diagnosis in women with UI. Differences in surgical technique and attention to subtle endometriosis may explain the higher pregnancy rates observed in this study compared to previous reports.

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#### **COMPLICATIONS AND COSTS ASSOCIATED WITH ADHESIOLYSIS AT THE TIME OF REPEAT CESAREAN DELIVERY.**

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**OBJECTIVE:** To calculate the proportion of women with adhesiolysis at primary or repeat Cesarean delivery (CD) and to compare rates of bleeding complications, postoperative length of stay (LOS), and total hospital costs in patients with and without adhesiolysis at repeat CD.

**DESIGN:** A propensity score-matched cohort study.

**MATERIALS AND METHODS:** Data from a sample of 609 US hospitals were used to identify women with either primary or repeat CD. We included women  $\geq 15$  years old, with singleton gestation, and discharged in calendar years 2007 or 2008. Adhesiolysis rates were calculated for primary and repeat CD. For repeat CD, propensity score matching was used to achieve comparability on patient, hospital, and physician characteristics between adhesiolysis and control groups. We evaluated risk for bleeding complications and mean postoperative LOS and total hospital costs between groups.

**RESULTS:** Of 223,129 primary and 166,980 repeat CD women included, adhesiolysis was performed in 0.5% (n=1,056) and 6.1% (n=10,262), respectively. Using propensity scores, 10,261 repeat CD women with adhesiolysis were matched to 10,261 controls without adhesiolysis; cohorts were comparable. Hemorrhage occurred in 1.7% (n=178) of the adhesiolysis group and 1.2% (n=121) of controls; relative risk (RR) =1.47, 95% CI = 1.17-1.85. Transfusion was required in 1.9% (n=194) of the adhesiolysis

group and 1.1% (n=108) of controls; RR = 1.80, (1.42-2.27). The adhesiolysis group had greater LOS (3.0  $\pm$  0.9 vs. 2.9  $\pm$  0.8 days; P<0.001) and higher total hospital costs (\$5,739  $\pm$  3,368 vs. \$5,448  $\pm$  3,031; P <0.001) compared with controls.

**CONCLUSION:** Adhesiolysis rates were significantly higher at the time of repeat compared with primary CD. At repeat CD, the risk of complications was higher in patients who had adhesiolysis than in those who did not. Measures to prevent adhesions taken during first CD may reduce complications and overall hospital costs at the time of repeat CD.

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#### **ROBOTIC-ASSISTED, LAPAROSCOPIC AND OPEN MYOMECTOMY: A COMPARISON OF SURGICAL OUTCOMES.**

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**OBJECTIVE:** To compare the surgical outcomes of robotic-assisted laparoscopic myomectomy (RM), standard laparoscopic myomectomy (LM) and open myomectomy (OM).

**DESIGN:** Retrospective, case-matched analysis.

**MATERIALS AND METHODS:** All patients who underwent RM between 2008 and 2009, LM and OM between 1995 and 2009 at Cleveland Clinic were included. The 3 groups were compared regarding the baseline demographics, operative and immediate postoperative outcomes associated with each type of surgery. Data analysis was performed using analysis of variance, Wilcoxon's rank sum test, Chi-square and Fisher exact tests where appropriate.

**RESULTS:** From a total of 575 myomectomies, 393 (68.3%) were OM, 93 (16.2%) were LM, and 89 (15.5%) were RM. The median (IQR) BMI of patients was 26.7 (22.9, 31.3) kg/m<sup>2</sup>. The three groups were comparable regarding size, number, and location of myomas after adjusting for age and BMI. Significantly heavier myomas were removed in the RM group 223.00 (85.25, 391.50) gm compared to the LM group 96.65 (49.50, 227.25) gm (p<0.001) and was lower than the OM group 263.00 (90.43, 448.25) gm (p=0.002). The RM group has significantly lower (P<0.001) blood loss compared to the OM and the LM groups with mean  $\pm$  SD of blood loss in ml is 100.00 (50.00, 212.50), 200.00 (100.00, 437.50) and 150.00 (100.00, 200.00) respectively. Total surgical time in minutes was 176.50 (138.00, 225.00) in the OM, 222.00 (147.00, 268.00) in the LM and 200.00 (167.75, 261.00) in the RM (P<0.001). Patients in the OM had significantly higher median length of hospital stay of 3 (2,3) days; compared to 1 (0,1) in the LM and 1 (1,1) days in the RM (p<0.001).

**CONCLUSION:** Robotic assisted myomectomy is associated with decreased estimated blood loss, and length of hospital stay compared to traditional laparoscopy and to open myomectomy. Despite the robotic use is associated with longer OR time compared to open procedures it is shorter than the laparoscopic approach. It appears that robotic technology is able to convert more laparotomy cases to laparoscopic cases than traditional laparoscopy alone.

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#### **MICROARRAY EXPRESSION PROFILING IN ADHESION AND NORMAL PERITONEAL TISSUES.**

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**OBJECTIVE:** Adhesions are the most common complication of abdominal and pelvic surgeries. Pelvic adhesions can be associated with several distressing and debilitating symptoms including pain and infertility, but may also be asymptomatic. We sought to identify molecular markers associated with post-operative adhesions using microarray expression profiling of adhesion and normal peritoneal tissues.

**DESIGN:** Case-control.

**MATERIALS AND METHODS:** Adhesion and normal peritoneal tissue samples were obtained from premenopausal women at the time of designated surgery (laparoscopy or laparotomy). Tissues were homogenized and RNA