

141. Laparoscopic Approach to Rectocele, Enterocele, and Vaginal Vault Prolapse Using Dermal Graft Augmentation

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Objective. To present the laparoscopic technique for complete posterior and apical vaginal support using site-specific defect repair and augmenting the repair with a dermal graft.

Measurements and Main Results. More than 50 women with vaginal vault prolapse, enterocele, and rectocele underwent site-specific repair of rectovaginal septum, including its lateral attachment to the levator ani muscles and apically to the uterosacral ligament. Due to the inconsistent nature of rectovaginal septum, we augmented the repair from the perineal body to the uterosacral ligaments using a cadaveric dermal graft. The procedure took approximately 90 minutes to perform and estimated blood loss was less than 100 ml.

Conclusion. This approach results in minimal morbidity and appears to have better clinical outcomes than site-specific repair without dermal graft augmentation.

142. Effect on Adhesion Formation of Adding Oxygen to CO₂ Pneumoperitoneum in Mice

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Objective. To evaluate the effect of adding oxygen on postoperative adhesion formation.

Measurements and Main Results. Adhesions were induced in adult NMRI mice by opposing monopolar lesions in uterine horns and pelvic sidewalls at laparoscopy using a mixture of CO₂ pneumoperitoneum with different proportions of oxygen (0, 0.5, 1, 1.5, 2, 2.5, 3, 6, 9, and 12%). After 7 days adhesions were scored quantitatively and qualitatively at laparotomy. Adhesion formation decreased with addition of 2% ($p = 0.003$), 2.5% ($p = 0.01$), 3% ($p = 0.04$), 6% ($p = 0.03$), 9% ($p = 0.05$), and 12% ($p = 0.04$) oxygen to CO₂ pneumoperitoneum. A half-maximum effect was obtained at around 1.5%, whereas maximum reduction in adhesion formation required only 2% to 3%.

Conclusion. Postlaparoscopic adhesions can be reduced by adding a small amount of oxygen to pneumoperitoneum, and pneumoperitoneum-induced peritoneal hypoxia during laparoscopic surgery is a cofactor in adhesion formation.

143. Prevention of CO₂ Pneumoperitoneum-Induced Peritoneal Hypoxia During Laparoscopic Surgery by Adding 3% Oxygen

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Objective. To evaluate the effect of adding oxygen on the effects of pneumoperitoneum.

Measurements and Main Results. Laparoscopies were performed in adult, female New Zealand white rabbits and adult, female NMRI mice using pure CO₂ pneumoperitoneum or CO₂ with 0.5% to 6% of oxygen. Adhesions were induced by opposing monopolar, bipolar, and laser lesions in uterine horns and pelvic sidewalls. Blood gases were assayed in the ear artery of rabbits. Postoperative adhesions increased with duration of pneumoperitoneum and with higher insufflation pressures. They decreased with addition of oxygen, with a half-maximum effect with 1.5% and maximum effect with 2% to 3%. Adding 6% oxygen almost completely prevented increase in PaCO₂ and decrease in pH, and subsequently, metabolic acidosis.

Conclusion. These data strongly suggest that CO₂ pneumoperitoneum results in hypoxia not only in the mesothelial lining but also in the splanchnic organs, and that this can be prevented by adding small amounts of oxygen to CO₂.

144. Microlaparoscopy in Evaluation and Treatment of Infertility

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Objective. To evaluate the safety and the efficacy of microlaparoscopy performed under local anesthesia for diagnosis and treatment of infertility.

Measurements and Main Results. All 78 infertile women (age range 25–45 yrs) underwent microlaparoscopy with dye chromopertubation. Forty patients had only local anesthesia with 6 ml mepivacaine 2% in cannula sites and 35 ml lidocaine 0.5% in the peritoneal cavity; 38 received additional intravenous propofol sedation. Pneumoperitoneum was limited to 0.5 to 2.0 L CO₂. In 25 cases operative procedures were performed (fimbrioplasty, adhesiolysis, ovarian drilling). Mean operating time was 22.5 minutes (range 12–30 min) for diagnostic procedures and 30 minutes (range 15–40 min) for operative procedures.