Are There Risks to HA-CMC Barriers in Gyn Surgery?

Postoperative Intra-Abdominal Collections Using a Sodium Hyaluronate-Carboxymethylcellulose (HA-CMC) Barrier at the Time of Laparotomy for Ovarian, Fallopian Tube, or Primary Peritoneal Cancers.

Leitao MM Jr, Natenzon A, et al.;
Gynecol Oncol 2009; 115 (November): 204-208

Methylcellulose anti-adhesion formation barriers may be associated with intra-abdominal adhesions postoperatively in a gynecologic cancer population.

**Background:** Adhesion formation following intra-abdominal surgery is an issue we have all dealt with and addressed in various empiric ways, not always based on rigorous scientific data. Over the past decade, multiple adhesion barriers have been developed and used in an attempt to reduce adhesion formation postoperatively. One of the most common is a sodium hyaluronate-carboxymethylcellulose barrier (Seprafilm®).

**Objective:** To determine whether sodium hyaluronate-carboxymethylcellulose (HA-CMC) barrier is associated with postoperative intra-abdominal adhesions in patients undergoing surgery for advanced ovarian, fallopian tube, or primary peritoneal cancer.

**Design:** Retrospective cohort study.

**Methods:** 423 consecutive laparotomies were performed for advanced adnexal or primary peritoneal malignancy, in whom 219 patients had HA-CMC barrier placed at the time of surgery. Intra-abdominal adhesions, both infected and non-infected, and defined as localized fluid accumulations in the absence of ascites were identified and statistical analysis performed.

**Results:** Intra-abdominal adhesions were seen in 8.2% of HA-CMC cases compared with 2.5% in cases without the barrier. This difference was statistically significant. All but 2 adhesions in both groups occurred in patients undergoing debulking procedures.

**Conclusions:** The use of HA-CMC appears to be associated with a 3.7-fold increased rate of postoperative intra-abdominal adhesions necessitating postoperative intervention.

**Reviewer's Comments:** This was an enlightening retrospective, cohort study comparing the incidence of postoperative intra-abdominal fluid adhesions in patients receiving a HA-CMC barrier film and those not. The former group had a statistically significantly higher incidence of intra-abdominal adhesions, both infected and non-infected, and the rate of adhesions was directly related to those patients undergoing an extensive debulking procedure for ovarian, fallopian tube, or primary peritoneal malignancy. Though Seprafilm may be associated with decreased adhesion formation, this must be balanced at least in a cancer population with an apparent increased risk of postoperative intra-abdominal fluid adhesions.

Additional Keywords: None

Print Tag: Refer to original journal article
Residual human papillomavirus positivity in women aged >30 years is a sensitive and objective measure of relative residual risks for cervical neoplasia.

**Background:** It is widely accepted that in women aged ≥30 years, who have tested negative on Pap tests, human papillomavirus (HPV) testing provides an objective measure of relative residual risk for cervical cancer. This is acknowledged by guidelines from the American Cancer Society and American College of Obstetrics and Gynecology, who both accept lengthened screening intervals for women who test negative on cytology and HPV tests.

**Objective:** To document prevalence of high-risk human papillomavirus (HPV)-DNA in women with negative Thin Prep imaged pap tests.

**Design/Participants:** Retrospective study of 26,558 women with negative Thin Prep pap tests who also underwent HPV testing between July 1, 2005, and December 31, 2007.

**Methods:** HPV detection rates were compared in women with either present or absent transformation zone endocervical cells in their sample.

**Results:** In women aged >30 years with negative pap smears, 8.1% had positive HPV-DNA tests. In women aged >40 years, the corresponding rate was 1.9%. There was no difference in HPV prevalence when comparing women with and without endocervical cell samples.

**Conclusions:** In women with negative liquid-based cytology, who are aged >30 years, prevalence of high risk HPV-DNA is

**Reviewer's Comments:** This was a very technical study on a large sample of low-risk women with negative cytology based on Thin Prep testing, who had concomitant HPV testing. The rate of HPV positivity in these low-risk women, aged >30 years, was

Additional Keywords: None

Print Tag: Refer to original journal article
Nitroglycerin administered transdermally did not positively affect bone mineral density changes in postmenopausal women. It was not effective in preventing bone loss.

**Background:** The role of nitroglycerin in metabolic pathways is an increasingly popular arena of study. There is evidence that nitroglycerin effects osteoblastic activity and may suppress osteoclast bone resorption, raising the possibility that nitroglycerin could be an alternative or adjunctive therapy for the treatment of osteoporosis.

**Objective:** To evaluate nitroglycerin as a prophylactic agent in postmenopausal bone depletion.

**Design:** Double-blind, placebo-controlled clinical trial.

**Participants:** 186 postmenopausal women, aged 40 to 65 years.

**Methods:** Patients were randomized to receive either placebo or 22.5 mg of transdermal nitroglycerin ointment daily over a 3-year period. Both groups received supplemental calcium and vitamin D. Bone mineral density studies were performed at 6 months and annually by dual energy x-ray absorptiometry.

**Results:** Following 36 months of therapy, bone mineral density diminished 2.1% in the active group and 2.5% in the placebo group representing no significant difference. Adverse and serious adverse events included only a higher incidence of headache in the treatment group.

**Conclusions:** Nitroglycerin transdermally in the dosage administered did not positively affect bone mineral density changes in postmenopausal women. It was not effective in preventing bone loss.

**Reviewer's Comments:** This was a well designed study with totally negative results. In spite of some clinical and laboratory evidence of a beneficial effect of nitroglycerin on preventing hormone dependent bone loss, clinical results of this study in humans did not confirm any advantage. Nitroglycerin is an essential component of many metabolic pathways and obviously has therapeutic uses in medicine, but at the dosage administered in this study, obviously has no demonstrable role in the management of early postmenopausal bone loss in women.

Additional Keywords: None

Print Tag: Refer to original journal article
As the incidence of obesity increases, the rate of bariatric surgical procedures likewise is increasing requiring greater clinician awareness of the impact of these surgical procedures on female reproductive processes.

**Background:** America leads the world in obesity incidence, with approximately two-thirds of adults either obese or overweight. Enter the role of bariatric surgery as an option for weight loss in those treated unsuccessfully by non-surgical interventions. The numbers of procedures performed in the United States is increasing quite dramatically.

**Objective:** To review current literature on morbid obesity and bariatric surgery with respect to female reproductive physiology.

**Design:** Literature review of articles relevant to female reproduction and surgical weight loss. **Discussion:** The review discusses the 2 bariatric surgical procedures currently in use: restrictive and malabsorptive, the former represented by gastric banding and the latter by gastric bypass procedures. Bariatric surgery appears to improve the hypothalamic pituitary ovarian and adrenal axes and correct the 10% incidence of subclinical hypothyroidism associated with morbid obesity. Fertility status appears to improve and oral contraceptive failure increases following surgery.

**Conclusions:** As incidence of obesity increases, the rate of bariatric surgical procedures likewise is increasing requiring greater clinician awareness of the impact of these surgical procedures on female reproductive processes.

**Reviewer’s Comments:** This was a good review article on the reproductive effects of morbid obesity and the changes that occur following bariatric surgery. The article discusses the two surgical procedures in use, restrictive and malabsorptive, and discusses the reproductive and hormonal changes occurring in women undergoing these procedures.

Additional Keywords: None

Print Tag: Refer to original journal article
The short term morbidity associated with total laparoscopic hysterectomy versus laparoscopic supracervical hysterectomy is similar.

**Objective:** To compare outcomes associated with laparoscopic supracervical hysterectomy (LSH) and total laparoscopic hysterectomy (TLH).

**Design:** Retrospective cohort study.

**Methods:** 1016 patients undergoing either LSH or TLH were identified retrospectively from a single institution from January 2000 through August 2008. Baseline characteristics were collected including age, race, gravidity, parity, body mass index, menopausal status, surgical indications, uterine weights, significant comorbid conditions, and any previous relevant surgery. Laparoscopic-assisted vaginal hysterectomies were excluded. Investigators compared perioperative parameters, and analyzed perioperative complications including urinary tract injury, bowel injury, vaginal cuff dehiscence, thromboembolic events, urinary retention, blood transfusion, febrile morbidity, and ileus. They then used a logistic regression model to calculate adjusted odds ratio for the outcomes.

**Results:** Of patients, 566 (55.7%) had undergone LSH and 450 (44.3%) had undergone TLH. Also of note, 48 gynecologists participated in the study sample with 83% of surgical procedures performed by 9 surgeons. TLH was significantly more commonly associated with adnexal surgery at 62.2%, as compared to adnexal surgery occurring in 42.8% of the LSH. There was no difference in perioperative hemoglobin change and there was no statistical significance in mean operating time. Postoperative fever, transfusion, ileus and urinary retention were similar in approximately 1% to 2% among groups. There was 2 times greater risk for serious complications associated with the TLH at 5.8% as compared to the LSH at 2.5%. In addition, there was a 5-fold increase in the risk for urinary tract injury for a TLH as compared to a LSH. Vaginal cuff dehiscence occurred in 6 patients in the TLH group for a rate of 1.3%. There was a 2-fold increase in conversion to laparotomy in the TLH group as compared to the LSH group. **Conclusions:** There is an overall similarity in the short-term morbidity associated with TLH and LSH. In this study, there was an increased risk of urinary tract injury with conversion to laparotomy. This risk was statistically significant in the TLH group as compared to the laparoscopic supracervical group.

**Reviewer's Comments:** A high percentage of urinary tract injuries at the time of hysterectomy are associated with cervical removal. Indications for LSH are evolving as our knowledge of cervical intraepithelial neoplasia increases. LSH can address many problems for which hysterectomies are performed, while avoiding the increased risk of urinary tract injury.

Additional Keywords: None

Print Tag: Refer to original journal article
Mesh erosion following sacral colpoperineopexy has been shown to be related to the patient’s smoking status, type of mesh used, and surgical technique.

**Background:** Vaginal apical prolapse is commonly repaired by the use of the abdominal sacral colpopexy. The long term success rate of this procedure has been reported as ranging from 84% to 99%, and in that respect it is considered the gold standard for repair of apical prolapse. Abdominal sacral colpopexy uses a synthetic or a biological graft to suspend the vaginal vault to the anterior longitudinal ligament of the sacrum. The most troubling complication associated with this procedure is mesh erosion.

**Objective:** To study the risk of mesh erosion associated with abdominal sacral colpoperineopexy (ASCP) performed at the time of hysterectomy.

**Design:** Retrospective case control study.

**Participants:** 31 patients with mesh erosion following ASCP compared with 93 controls.

**Methods:** From October 2003 through May 2007, investigators identified patients who had experienced mesh erosion following ASCP. Controls were matched at a ratio of 1:3 for age, menopausal status, use of hormone replacement therapy, smoking status, diabetes status, and concomitant abdominal vaginal rectocele repair.

**Results:** After accounting for other potential confounders, investigators determined that the odds ratio of vaginal mesh erosion was not different for patients who underwent hysterectomy at the time of ASCP compared to patients who had undergone previous hysterectomy.

**Conclusions:** Concomitant hysterectomy at the time of ASCP does not increase the risk for vaginal mesh erosion.

**Reviewer’s Comments:** Although rate of mesh erosion is not increased in patients who have simultaneous hysterectomy and ASCP, the length of time until erosion occurs is reduced. Cuff erosion following ASCP regardless of the concomitant procedures is going to occur at a rate of 5-6%.

Additional Keywords: None

Print Tag: Refer to original journal article
Most Gyn Surgery Nerve Injuries Resolve Spontaneously

Pelvic Nerve Injury Following Gynecologic Surgery: A Prospective Cohort Study.

Bohrer JC, Walters MD, et al:

Am J Obstet Gynecol 2009; 201 (November): 531.e1-531e.7

Appropriately positioning the patient for gynecologic surgery is likely the most single important preventive measure for peripheral nerve injury.

**Objective:** To study the incidence of postoperative neuropathy resulting from gynecologic surgery.

**Design:** Prospective, cohort study.

**Participants:** 616 patients undergoing elective gynecologic surgery.

**Methods:** Patients who were scheduled for elective gynecologic surgical procedures, either for benign conditions or for oncologic conditions were included in this study. Patients were aged ≥18 years, without history of neurologic condition. Preoperatively, a standardized neurologic history and physical examination was performed. This was repeated within 24 hours following surgery. A single examiner trained in this standardized examination performed the neurological evaluations. A rating scale from 0 to 5 was used to score motor strength, light touch and pin prick was used to evaluate sensation of the abdomen and lower extremities. Loss of sensation, paresthesias, or dysesthesias in the area of a nerve distribution was defined as a neuropathy combined with additional recognized muscle weakness on distribution of peripheral nerves. When neurologic findings suggested the presence of a peripheral neuropathy, subjects were reevaluated with the same standardized examination at 2 weeks and 6 weeks following the surgery, and every 3 months until symptoms resolved.

**Results:** Overall incidence of postoperative neuropathy in patients was 1.8%. There were 14 peripheral nerve injuries identified in 11 patients; 5 of these involved the femoral cutaneous nerve, 5 involved the femoral nerve, and 1 was a common fibular nerve injury. There was 1 ilioinguinal/iliohypogastric injury, 1 saphenous injury, and 1 genitofemoral nerve injury. In follow-up, all but 1 patient had complete resolution of the neurologic symptoms. Time to recovery ranged from 1 day to 6 months with a median resolution time of 31.5 days.

**Conclusions:** The majority of cases of neuropathic injury following gynecologic surgery will resolve spontaneously. Overall, incidence of lower extremity neuropathy that can be attributed to gynecologic surgery is low, and in this study it was 1.8%.

**Reviewer's Comments:** To avoid postoperative neuropathies, gynecologists must be familiar with the neuroanatomy of the pelvis and lower extremities.

Additional Keywords: None

Print Tag: Refer to original journal article
Objective: To study the left upper quadrant at Palmer’s point as an insertion for laparoscopic instruments.

Design: Retrospective cohort study.

Participants: 75 women aged 18 to 50 years who had undergone abdominal MRI studies.

Methods: 248 women who had undergone abdominal MRI studies from January 1, 2006, through July 15, 2008, were initially screened. Palmer’s point was defined as the location 3 cm below the midcostal margin, in the left upper quadrant of the abdomen. Investigators used MRI images showing the ribs, so the relative location of the midclavicular line could be determined on both chest x-ray and available MRI. They measured anterior abdominal wall thickness at Palmer’s point, then determined measurements from an angle of insertion perpendicular to the skin in the axial plane and perpendicular to the spine. They also measured a 45° insertion line that is perpendicular to the skin and 45° in the caudal direction related to the patient's spine in the sagittal plane. Subjects were divided into 3 groups according to body mass index (BMI) with normal weight BMI defined as 22, overweight defined as a BMI of 25 to 30 kg/m2, and obese as being >30 kg/m2. Investigators then calculated the average distance from Palmer's point to the posterior peritoneum using the 2 angles of potential instrument insertion.

Results: Average anterior wall thickness for all groups, using a perpendicular insertion line, was 2.7 cm. This increased as BMI increased. In using the 45°insertion line, abdominal wall thickness was 3.9±0.2 cm. This also increased as BMI increased. Instruments that were potentially inserted perpendicular to the skin in the axial plane and perpendicular to the spine had an average distance of 10.0±0.2 cm from the posterior peritoneum and a distance of 11.2±0.2 cm to the aorta. In instruments that would be inserted at an angle that was 45°caudal to the spine, the distance to the posterior peritoneum increased to 16.6±0.2 cm.

Conclusions: There is an increased margin of safety when using the Palmer's point insertion of laparoscopic instruments by directing instrument insertion perpendicular to the skin and angled at 45°caudally in relation to the spine.

Reviewer's Comments: One advantage of Palmer’s point in the left upper quadrant is that the abdominal wall is consistently thin even in patients who are obese. This study shows that the thickness of the abdominal wall at that point does increase with increasing BMI, but that it is still a safe distance from the posterior peritoneum.

Additional Keywords: None

Print Tag: Refer to original journal article
Objective: To evaluate both maternal and fetal outcomes of pregnant patients with mechanical heart valves managed with 3 different anticoagulation regimens.

Design: Retrospective study.

Methods: Study was done over 11.5 years. Patients were given 1 of 3 options for anticoagulation. The first was enoxaparin and an aspirin prior to 6 weeks gestation, continuing until delivery. The second substituted warfarin with enoxaparin from 6 weeks until 12 weeks, reinstituted warfarin until 34 weeks, then discontinued warfarin and reinstituted enoxaparin until delivery in addition to using an aspirin. The third regimen included warfarin and aspirin but discontinued warfarin at 34 weeks and began enoxaparin until delivery. In patients receiving enoxaparin, monthly monitoring of anti-Xa levels was recommended. Outcomes included rate of thromboembolism and hemorrhagic complications including antenatal hemorrhage as well as postpartum hemorrhage. Fetal outcomes included rate of spontaneous loss prior to 20 weeks gestation, stillbirth, neonatal death, preterm delivery, small for gestational age (SGA) infant, and possible Warfarin embryopathy.

Results: There were 31 patients that had prosthetic mechanical valves who had 47 pregnancies. Of patients, 72.3% took enoxaparin throughout the entire pregnancy. Overall, there were thromboembolic complications in 7 (14.9%); 5 were in the antenatal period and 2 postpartum. Of these cases, 5 occurred with enoxaparin therapy. However, in 3 cases there was non-compliance with the regimen and in 2 cases there were thromboembolic complications prior to beginning enoxaparin. Antenatal hemorrhagic complications occurred in 8 (17%) pregnancies: 5 with enoxaparin and 3 with IV unfractionated heparin. There were 6 primary postpartum hemorrhages and 9 secondary postpartum hemorrhages. Of the 9 cases, 6 were using enoxaparin. Of those 6 cases, 5 used a combination of enoxaparin and warfarin; only 1 used enoxaparin solely. Also, 3 were using either unfractionated heparin or warfarin. With respect to fetal outcomes, there were 4 pregnancy terminations; 1 was as a result of fetal hydrocephalus while the mother was on warfarin. Of women using mostly enoxaparin, 96% delivered a surviving infant compared to 75% using warfarin. There were 4 stillbirths or neonatal deaths thought to be directly related to the use of warfarin. Of pregnancies using warfarin, 58.3% had SGA infants compared to 8.7% using enoxaparin. There were 9 preterm deliveries, 6 in the enoxaparin group and 3 in the warfarin group.

Conclusions: With appropriate therapeutic dosing compliance, enoxaparin used in pregnant patients with mechanical heart valves have a low risk of valve complications and successful fetal outcomes.

Reviewer's Comments: Patients using enoxaparin having significant complications had non-compliance issues. Use of enoxaparin results in successful maternal outcomes with close monitoring of the low molecular weight heparin levels. It is interesting that fetal outcomes appear to be worse in patients taking warfarin.
Recurrence of Severe Preeclampsia May Be Lower Than Once Thought

The Recurrence Risk of Severe De Novo Pre-Eclampsia in Singleton Pregnancies: A Population-Based Cohort.

McDonald SD, Best C, Lam K.: BJOG 2009; 116 (November): 1578-1584

Having had severe preeclampsia in a previous pregnancy increases the risk of recurrence to approximately 6.8%.

**Objective:** To determine risk of severe preeclampsia in a subsequent pregnancy in patients having had severe preeclampsia in an index pregnancy and to determine if there were any specific risk factors associated with recurrence.

**Design:** Population-based retrospective cohort study.

**Methods:** Information obtained from the Canadian Institute for Health Information Discharge database was used. During the 7-year study period, patients having had ≥2 deliveries were evaluated. Patients with chronic hypertension were excluded. Patients having severe preeclampsia in the index pregnancy and recurrence of severe preeclampsia in the subsequent pregnancy were identified. Primary outcome was risk of recurrence for preeclampsia; secondary outcomes included risks for severe preeclampsia in a subsequent pregnancy regardless of pre- eclamptic status in the index pregnancy.

**Results:** There were 183,144 women having ≥2 deliveries without severe preeclampsia. Of patients, 1954 had severe preeclampsia in the first pregnancy. Of those, 133 subsequently had recurrent severe preeclampsia during a subsequent pregnancy. Risk of recurrent preeclampsia was 6.8%. Mean maternal age at delivery in the index pregnancy with severe preeclampsia was 28.9 years compared to 31.5 years at the time of the subsequent delivery. Of those women with severe preeclampsia in the index pregnancy, 80.7% did not develop preeclampsia in a subsequent pregnancy and 11.4% did develop preeclampsia although it was not severe. Risk factors found for recurrent severe preeclampsia included maternal renal disease and maternal age >35 years. Risk factors for severe preeclampsia in a subsequent pregnancy even without preeclampsia in the index pregnancy included advanced maternal age, renal disease, interpregnancy interval of >5 years, diabetes, fetal growth restriction, connective tissue disease, and fetal death.

**Conclusions:** Risk of recurrent severe preeclampsia in patients with previous severe preeclampsia in an index pregnancy is 6.8%.

**Reviewer's Comments:** Recurrent risk of 6.8% is significantly lower than the 40% quoted in another landmark study. However, one must be cognizant of the differences in study populations. Also, low dose aspirin for prevention of recurrent preeclampsia has been used recently. Whether this was being used in this study is unknown. Certainly, the risk factors identified may also be useful in counseling patients with respect to their subsequent recurrence risks.

Additional Keywords: None

Print Tag: Refer to original journal article
With significant efficacy of treatment of congenital cytomegalovirus (CMV) with intravenous CMV immune globulin, universal screening is cost effective.

Objective: To determine if a specific screening strategy for primary maternal cytomegalovirus (CMV) infection with subsequent treatment with CMV-intravenous immune globulin (CMV-IVIG) could be identified.

Design: Decision-analytic model evaluation.

Methods: This model compared 3 screening strategies for primary maternal CMV infection. The intention was to treat all patients with CMV-IVIG. The first strategy was to screen all patients (universal screening). The second strategy was to screen those patients at risk, defined as "patients in a household with a child aged

Results: Universal screening was preferred over risk-based screening and screening based on sonographic findings. With the use of universal screening, it was estimated that there would be 615 cases of neonates with severe disabilities annually. With risk-factor based screening, the estimate was 8253 and with sonographic-based screening, 8227. A significant decrease with the use of universal screening was shown. Universal screening was also found to be most cost effective compared to risk-factor screening, as well as sonographic-based screening. If treatment with CMV-IVIG, however, only resulted in a reduction ≤47%, then universal screening would not be cost effective.

Conclusions: Universal screening for primary maternal CMV infection appears to be cost effective, assuming significant efficacy of treatment with CMV-IVIG.

Reviewer's Comments: The assumption in this study regarding treatment is mainly based on one study demonstrating the efficacy of CMV-IVIG in the treatment of primary maternal CMV infection. Certainly, use of avidity testing has improved our ability to diagnose primary CMV infection versus recurrent; however, before universal screening should be undertaken, there should be further studies evaluating the efficacy of CMV-IVIG in the treatment of primary CMV infection to decrease vertical transmission.
Cause of Non-Reassuring Fetal Status Important in Cesarean Decision

Urgent Cesarean Delivery for Fetal Bradycardia.

A non-reassuring fetal status, the interval from bradycardia to delivery secondary to an irreversible cause, does correlate with a deteriorating umbilical cord arterial pH.

Objective: To determine if the interval from fetal bradycardia to delivery or the interval from decision to delivery were related to umbilical cord arterial pH.

Design: Retrospective study.

Methods: Patients delivered by cesarean section because of a non-reassuring fetal status during a 3-year period were evaluated. Causes of fetal bradycardia were classified into 1 of 3 groups: irreversible, potentially reversible, and unknown or no identifiable cause. All groups were evaluated for umbilical artery cord pH, base excess, decision-to-delivery interval, bradycardia-to-delivery interval, birthweight, and gestational age.

Results: 236 women underwent urgent cesarean section. Of patients, 39 were in the irreversible group, 22 in the potential reversible group, and 174 in the unknown group. Irreversible conditions included placental abruption, uterine rupture, umbilical cord prolapse, failed instrument delivery, and preeclampsia. Potentially reversible conditions included iatrogenic uterine hyperstimulation, hypotension secondary to epidural anesthesia, aortocaval compression, and result of an external cephalic version. Median bradycardia-to-delivery interval was 11 minutes in the irreversible group, 16.5 minutes in the potentially reversible group, and 16 minutes in the unknown group. Median decision-to-delivery interval was 10 minutes in the irreversible group, 11.5 minutes in the potentially reversible group, and 11 minutes in the unknown group. Of cases, 25.6% in the irreversible group had an umbilical cord pH.<br>

Conclusions: If there is an irreversible cause of bradycardia, an increasing interval from bradycardia to delivery correlates with a deteriorating umbilical cord arterial pH.

Reviewer's Comments: The bradycardia-to-delivery interval in the irreversible cases was approximately 5 minutes shorter than the other groups. It may be that in the irreversible group, there was no hope for recovery while in the other groups clinicians were looking for some signs of recovery before performing a cesarean section. The decision to perform a cesarean section should not only be based on the fetal status, but also on the cause of the non-reassuring fetal status.

Additional Keywords: None

Print Tag: Refer to original journal article
Elective Induction of Labor Is Safe, Recommended in Some Cases

Caughey AB, Sundaram V, et al::

Beyond 41 weeks of gestation, elective induction of labor has a lower cesarean section rate than expectant management of pregnancy.

**Objective:** To assess benefits and risks of elective induction of labor versus expectant management of pregnancy.

**Design:** Systematic review of published English language literature.

**Methods:** This study incorporated experimental and observational studies accessed through MEDLINE, the Cochrane Center, and other sites. Because of weak design, 11 randomized controlled trials and 25 observational studies were selected for review of 6117 potentially relevant articles.

**Results:** Expectant management of pregnancy was associated with a higher odds ratio (1.22) of cesarean section when compared with elective induction of labor. Women ≥41 weeks of gestation managed expectantly had a higher risk of cesarean delivery and presence of meconium-stained amniotic fluid than those electively induced.

**Conclusions:** At ≥41 weeks of gestation, elective induction of labor is associated with a diminished risk for cesarean delivery and meconium-stained amniotic fluid.

**Reviewer's Comments:** I like the idea that this review was published in the Annals of Internal Medicine for our internist colleagues ought to be aware that from 41 weeks of gestation onward, elective, and I underline the word elective, induction of labor translates into a decreased risk of cesarean delivery and meconium-stained amniotic fluid compared to expectant management of post date pregnancy. That is the strength of this good review; but as the authors point out, there are no decent recent randomized controlled trials of elective induction of labor at

Additional Keywords: None

Print Tag: Refer to original journal article
**Objective:** To determine the effect of intracytoplasmic sperm injection (ICSI) and male factor infertility on sex ratios in resulting births.

**Design:** Clinic-based historic cohort study.

**Methods:** Data were accessed through the Society for Assisted Reproductive Technology through 2005. The cycles utilized ejaculated sperm used for insemination or ICSI in the presence or absence of male factor infertility. The probability of a male infant with and without the use of ICSI and in the presence or absence of male factor infertility was determined. Use of cleavage versus blastocyst stage transfer was also evaluated.

**Results:** The sex ratio for all U.S. live births in 2005 was 52.5%. With blastocyst stage embryos, sex ratios (male to female) were 49.6% and 54.9% with and without ICSI and 52.6% and 50% with and without male factor infertility, respectively. With cleavage-stage embryos, sex ratios were not significantly affected by ICSI, male factor infertility, or both.

**Conclusions:** Use of intracytoplasmic sperm injection, particularly in blastocyst stage embryos, is associated with decrease in sex ratio of male infants.

**Reviewer's Comments:** In humans, there is a disproportionate loss of males after conception and at birth, reaching gender equilibrium by the third or fourth decade of life, and declining even further into old age. This study shows that the sex ratios of offspring (M:F) following ART is reduced when ICSI rather than insemination is used, and this reduction in the proportion of males born after ICSI was not influenced by other variables such as female age, ethnicity, or semen source. Male factor infertility alone was not associated with a change in this secondary sex ratio either. An overall sex ratio of 49.8% was observed in this study, but the paper does not provide a firm explanation for it, emphasizing that although assisted reproductive technologies have a direct effect on sex ratios, our understanding of causality is deficient.

Additional Keywords: None

Print Tag: Refer to original journal article
Enhancing immune response by the use of targeting specific oncoproteins is a promising therapy for epithelial neoplasia.

**Objective:** To study the effects of vaccination with synthetic, non-peptide vaccine against human papillomavirus (HPV)-16 oncoproteins and its effect on vulvar intraepithelial neoplasia.

**Design:** Non-controlled, prospective observational cohort study.

**Participants:** 20 patients with vulvar intraepithelial neoplasia.

**Methods:** Patients were identified who had grade III vulvar intraepithelial neoplasia, and who consented to administration of a vaccine containing HPV-16, E6, and E7 synthetic peptides. The study was based on the hypothesis that specific HPV-16 t-cell responses could alter the course of vulvar intraepithelial neoplasia. Patients were required to have normal pretreatment laboratory blood values, be non-pregnant, and have either no immunosuppressive medications or diseases associated with immunodeficiency. All patients received 3 or 4 vaccinations from October 2004 to May 2007. Clinical efficacy was determined by response of symptoms, lesion size, histologic features of the tissue, and presence or absence of HPV-16 DNA. The complete response was defined as disappearance of the lesions and symptoms of vulvar intraepithelial neoplasia. No response was considered to be a reduction of

**Results:** Local swelling at the vaccination site occurred in 100% of patients and 64% had a febrile response. Clinical response and relief of symptoms was reported by 12 patients 3 months following the last vaccination. Of these, 5 had complete regression of the lesions and 4 patients no longer had detectable HPV-16. At a 12-month interval following vaccination, 15 patients had a defined clinical response. Of patients, 9 had a complete response. Those patients who were classified as having a complete response were found to have maintenance of this response at 24 months of follow-up. All patients in this study had a vaccine-induced t-cell response, but this was greater in patients who completely responded at 3 months.

**Conclusions:** Vaccination with HPV-16 oncoprotein E6 and E7 produces clinical responses in women who have HPV-16 positive vulvar intraepithelial neoplasia.

**Reviewer's Comments:** This is a promising study that shows immunotherapy of vulvar intraepithelial neoplasia can induce a strong long-lasting virus specific immunity.

Additional Keywords: None

Print Tag: Refer to original journal article
Young women in reproductive years who develop breast cancer should be advised about the possibility of a permanent alteration in fertility or other associated difficulties. Oocyte retrieval cannot be an afterthought.

Objective: To compare timing of chemotherapy in women undergoing ovarian stimulation and oocyte retrieval with those who did not.

Design: Retrospective cohort study.

Participants: 82 women aged

Methods: Patients were retrospectively identified from 2002 through 2008. Data were collected on the diagnosis, surgery, consultation with reproductive endocrinology, and initiation of chemotherapy. Clinical pathologic characteristics were recorded, and those patients who were aged ≥40 years diagnosed with non-invasive breast cancer who received neoadjuvant chemotherapy or did not receive adjuvant cytotoxic chemotherapy were excluded. Of patients, 19 sought reproductive endocrine consultation and oocyte retrieval; 63 patients did not seek oocyte retrieval. Investigators were unable to determine from the chart review if patients were offered or declined reproductive endocrine consultation. The protocol in this institution was to use gonadotropins for cycle stimulation with follicle monitoring and egg retrieval followed by cryopreservation.

Results: Of the 16 women who underwent oocyte retrieval, 84.2% had never been pregnant. This compared with 25.4% in the group that did not seek oocyte retrieval. Of the oocyte retrieval group, 47.3% had node negative disease as compared to 25.4% in the non-retrieval group. Estrogen receptor positive tumors were found in 73.7% of the patients in the oocyte retrieval group as compared to 65.1% in the non-retrieval group. Median time from the initial diagnosis of breast cancer until patient received chemotherapy was 71 days with a range of 45 to 160 days in the oocyte retrieval group versus 67 days with a range of 27 to 144 days in the group that did not have oocyte retrieval. Time from definitive operation to chemotherapy was similar in both groups, with 30 days for the oocyte retrieval group and 29 days for non-oocyte retrieval group.

Conclusions: There is no significant prolonged time interval for starting adjuvant chemotherapy for breast cancer in a group of women who sought oocyte retrieval.

Reviewer's Comments: This is important counseling information for gynecologists. When our patients are diagnosed with breast cancer, fear of the disease can make future reproduction an afterthought. This study shows that oocyte retrieval can be performed in a relatively short period of time without significant delay of chemotherapy intervention.

Additional Keywords: None

Print Tag: Refer to original journal article
Objective: To determine risk factors for developing vesicovaginal fistula following cystotomy at the time of hysterectomy.

Design: Retrospective case-controlled study.

Participants: 1317 persons undergoing hysterectomy.

Methods: Patients' records were identified and reviewed from January 1, 2000, through May 31, 2004. All subjects had undergone a hysterectomy for benign indications, and at the time of hysterectomy a routine cystoscopy was performed to confirm ureteral patency. Data were collected relative to patient demographics, surgical data, and postoperative information with the intent of identifying patients with incidental cystotomy that resulted in vesicovaginal fistula. Investigators also identified control subjects who had undergone an incidental cystotomy at the time of hysterectomy without formation of vesicovaginal fistula. They also retrospectively classified the cystotomies according to the American Association of Surgery of Trauma System.

Results: Of patients, 46% were performed by abdominal route, 48% performed by the vaginal route, and 6% were performed by laparoscopic-assisted vaginal hysterectomy technique. Investigators identified 34 incidental cystotomies accounting for 2.6% of the entire cohort. Of these patients, 4 developed vesicovaginal fistulas for an overall incidence of vesicovaginal fistula following benign hysterectomy of 0.7%. They found that patients who developed vesicovaginal fistulas had a trend toward a greater use of tobacco, with 75% tobacco users versus 23% non-tobacco users. There were no differences in age, weight, parity, racial breakdown, or the rate of hypertension, diabetes, prior pelvic infections, cesarean delivery, or other pelvic surgeries between patients who developed vesicovaginal fistulas and those who did not. It was noted that persons who developed a vesicovaginal fistula had a longer operative time, and had a higher grade bladder injury than those who did not. In addition, those patients who developed vesicovaginal fistulas tend to have larger uterine size and had more operative blood loss at the time of the surgical procedure.

Conclusions: Vesicovaginal fistula formation is more likely to occur following a high grade bladder injury.

Reviewer's Comments: Although this study did not have the power to show statistical significance of tobacco use with increased incidence of vesicovaginal fistula, the 2 patients who did develop early fistulas were both heavy smokers. When a bladder is severely traumatized, the addition of a peritoneal or omental flap at the time of repair can possibly prevent a fistula from forming.

Additional Keywords: None

Print Tag: Refer to original journal article
The presence of incontinence is not predictive of the onset of depression; however, major depression can be predictive of the onset of urinary incontinence.

**Objective:** To study the possibility of depression being associated with urinary incontinence, either as a cause or a result.

**Design:** Longitudinal cohort study.

**Participants:** 5820 women enrolled in the Female Health and Retirement Study.

**Methods:** The Health and Retirement Study is designed to evaluate interactions of depressive symptomatology with other patient self-reported co-variables. Patients completed biannual telephone interviews, of which those conducted in 1996, 1997, 2000, and 2003 contained specific questions regarding urinary incontinence. Information on age, race, education, marital status, employment, household income, medical conditions, functional status, body mass index, exercise, smoking, alcohol, psychiatric medications, and parity were collected at encounters throughout the study. The Composite International Diagnostic Interview was administered during the third wave of the study; this tool is diagnostic using the DSM-IV-TR diagnostic criteria for depression. Investigators examined the relationship between major depression and urinary incontinence. A second analysis was used to predict the relationship of incident depression in urinary incontinence.

**Results:** Cumulative incidence of depression at 6 years was 11%. Cumulative incidence of incontinence at 6 years was 21%. Patients who were diagnosed with major depression had increased odds of incidence incontinence with an adjusted odds ratio of 1.46 (95% CI of 1.08 to 1.97). Investigators found no increased odds of incidence of depression associated with new onset incontinence.

**Conclusions:** The presence of incontinence is not predictive of the onset of depression; however, major depression can be predictive of the onset of urinary incontinence.

**Reviewer’s Comments:** In this study, women with major depression at baseline were 50% more likely to have urinary incontinence during the follow-up period than women who were not depressed. This finding is difficult to explain, but does reflect a causality relation of depression with urinary incontinence.

Additional Keywords: None

Print Tag: Refer to original journal article
Excessive Pregnancy Weight Gain Will Likely Follow Obese Patients

Excessive Gestational Weight Gain and Postpartum Weight Retention Among Obese Women.

*Vesco K, Dietz P, et al:*
Obstet Gynecol 2009; 114 (November): 1069-1075

An incremental increase in weight gain during pregnancy will result in an increase in weight retention one year after delivery in the obese patient with possible long-term complications.

**Objective:** To determine the effects of incremental weight gain during pregnancy on subsequent 1-year postpartum weight retention in a population of obese patients.

**Design:** Retrospective study over a 6-year period.

**Participants:** 1656 obese patients meeting study criteria.

**Methods:** Obese patients were identified as having body mass index (BMI) >30kg/m². All patients had a maternal weight documented between 6 months prior to pregnancy and 12 weeks gestation, within 2 weeks prior to delivery, and 1 year postpartum. Primary outcome was the amount of weight retained at 1-year postpartum assessment. Weight retention was categorized as 10 pounds. Pregnancy weight gain was stratified into

**Results:** Range of pregnancy weight change was from a weight loss of approximately 33 pounds to a weight gain of 98 pounds. Weight loss occurred in 5% of patients; weight gain of 0 to 15 pounds in 24%; 15 to 25 pounds in 27%; 25 to 35 pounds in 23%; and >35 pounds in 21%. The 1-year postpartum weight retention increased according to the pregnancy weight change category. For women who lost weight, the weight change at 1 year was a mean weight loss of 2.3 pounds. For the group of 0 to 15 pounds weight gain, the postpartum weight change at 1 year was a loss of 1.7 pounds; however, if the pregnancy weight gain was between 15 to 25 pounds, postpartum weight change was 2.8 pounds greater; in the 25 to 35 pound group, 6.3 pounds greater; and in the >35 pound, 13.7 pounds greater. Overall, for each pound gained during pregnancy, there was an increase above the baseline weight at 1 year postpartum of 0.4 pounds. The risk of having a postpartum weight change of >10 pounds at 1 year was increased 2-fold if the pregnancy weight gain was between 15 to 25 pounds, approximately 4-fold if the weight gain was between 25 to 35 pounds, and approximately 8-fold if the weight gain was >35 pounds.

**Conclusions:** In the obese patient, an incremental increase in weight gain during pregnancy will result in an increase in weight retention 1-year postpartum.

**Reviewer’s Comments:** Increasing gestational weight gain is associated with an increased risk of gestational diabetes, gestational hypertension, cesarean delivery, and macrosomic infants. Not only are pregnancy-associated complications increased, but increased weight gain postpartum will be associated with known long-term obesity complications. Because of this, it is important to have a frank discussion regarding weight gain with the obese patient.

Additional Keywords: None

Print Tag: Refer to original journal article
Objective: To determine if there was an increased risk for the development of postpartum metabolic syndrome when a pregnancy is complicated by vascular disorder and to determine if the frequency of metabolic syndrome is increased in pregnancies that have early onset of vascular complications.

Design: Retrospective study over a 10-year period.

Participants: 849 vascular disorder patients.

Methods: Patients were identified that had 1 of the following vascular disorders in pregnancy: gestational hypertension; preeclampsia; eclampsia; hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome; fetal growth restriction; placental abruption; stillbirth secondary to placental insufficiency. Patients were divided into those having a vascular disorder

Results: 376 patients were in the 1C1c, insulin, triglycerides, blood pressure, microalbuminuria, and lower high density lipoprotein levels. Specific criteria were used to assess overall prevalence of metabolic syndrome, and in all 4 criteria, there was a 2-fold increase in the metabolic syndrome in the group of

Conclusions: In women whose pregnancy was complicated by a vascular disorder, there is a 2-fold increase in metabolic syndrome if delivery occurred at

Reviewer's Comments: In this study, assessment for metabolic syndrome was done only in the postpartum period. There may have been individuals in which the metabolic syndrome was preexisting. However, in this group of young women having vascular disorders early in pregnancy, close follow-up and enrollment in prevention and treatment programs should be done in order to prevent possible cardiovascular complications in the future.

Additional Keywords: None

Print Tag: Refer to original journal article
Objective: To determine the number of cesarean sections that would need to be performed to prevent 1 case of an anal sphincter laceration occurring secondary to an operative vaginal delivery in a group considered at-risk.

Design: Retrospective review over a 1.5-year period.

Participants: 503 patients meeting study criteria.

Methods: Patients were considered at-risk if one of the following diagnoses were found: cephalopelvic disproportion, maternal exhaustion, arrest of descent, or fetal distress. Outcomes of patients in the at-risk cohort having a cesarean section were then compared to those having an operative vaginal delivery. Primary outcome was the occurrence of anal sphincter laceration either third or fourth degree. Risk reduction for obstetric anal sphincter lacerations was determined by evaluating the laceration rate of both the cesarean section group and in the operative vaginal delivery group.

Results: 463 patients had information available for analysis; 209 were in the operative vaginal delivery group and 254 in the cesarean section group. In the operative vaginal delivery group, 23.9% had an anal sphincter laceration compared to 0% in the cesarean section group. In the operative vaginal group, 27.8% of primiparous patients had an anal sphincter laceration compared to 10.6% of multiparous patients. In the operative vaginal delivery group, 51.7% had an episiotomy. An anal sphincter laceration occurred in 26.9% of those having an episiotomy compared to 20.8% when an episiotomy was not performed. In the operative vaginal delivery group, those having a vacuum-assisted delivery were 2.5 times more likely to have a sphincter laceration than those having a forceps delivery. Overall, the absolute risk reduction for anal sphincter laceration was 23.9% if cesarean section was utilized and the number needed to treat for the prevention of an anal sphincter laceration was 4.2. Conclusion: In order to prevent 1 anal sphincter laceration at the time of operative vaginal delivery, 5 cesarean sections would have to be performed.

Reviewer's Comments: Some studies have concluded that pregnancy itself may be a risk factor for anal incontinence. It would appear however, in this study that the mode of delivery increased the risk for anal sphincter laceration concluding that the mode of delivery is more important than a pregnancy itself. Also, it is not surprising that the anal sphincter laceration rate in the primiparous patients was increased compared to the multiparous patients.