

FEBRUARY 2015 ■ Volume 212, Number 2

### EDITORIAL

#### 125 Increasing the management options for early pregnancy loss: the economics of miscarriage

Eric A. Strand

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### SMFM CLINICAL GUIDELINE

#### 127 Society for Maternal-Fetal Medicine (SMFM) Clinical Guideline #7: nonimmune hydrops fetalis

Society for Maternal-Fetal Medicine (SMFM); Mary E. Norton, MD; Suneet P. Chauhan, MD; and Jodi S. Dashe, MD

### EXPERT REVIEWS

#### 140 Does a postpartum hemorrhage patient safety program result in sustained changes in management and outcomes?



PATIENT SAFETY SERIES

Brett D. Einerson; Emily S. Miller; William A. Grobman

A multidisciplinary safety program resulted in sustained increases in treatments directed at resolving postpartum hemorrhage and a decrease in intensive care unit admissions.

### SYSTEMATIC REVIEWS

#### OBSTETRICS

#### 145 Precocious cervical ripening as a screening target to predict spontaneous preterm delivery among asymptomatic singleton pregnancies: a systematic review

Qing Li; Mathew Reeves; John Owen; Louis G. Keith

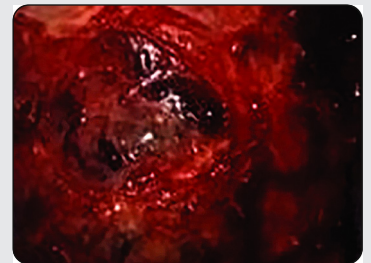
Composite measures of precocious cervical ripening, compared with short cervical length, improve predictive performance of screening for preterm delivery and could serve as potential screening targets.

(continued)



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### ON THE COVER



Human chorionic gonadotropin levels in a 36-year-old patient continued to rise despite the administration of multiple doses of methotrexate. Ultrasound imaging revealed implantation of a 7-week gestation within the endometrium overlying a cesarean scar with thin adjacent myometrium. Given several management options, the patient chose total laparoscopic hysterectomy.

Related article, page 247

AJOG Roundup and  
In the Spotlight at [ajog.org](http://ajog.org)

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## CLINICAL OPINION

### REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY

#### 157 Public reporting of assisted reproductive technology outcomes: past, present, and future

R. Stan Williams; Kevin J. Doody; Glenn L. Schattman; Eli Y. Adashi

This Clinical Opinion traces the history of the public reporting of assisted reproductive technology, describes the recently modified (present day) reporting platform, and explores potential future improvements thereof.

## CALL TO ACTION

#### 163 Medical education for obstetricians and gynecologists should incorporate environmental health

Veronica A. Tinney; Jerome A. Paulson; Susanne L. Bathgate; John W. Larsen

Education on environmental health topics is limited for obstetrician-gynecologists and should be incorporated into medical education for practitioners to effectively counsel patients on reducing environmental exposures.

## VIEWPOINT

#### 167 Creating and selling embryos for “donation”: ethical challenges

Robert Klitzman; Mark V. Sauer

The creation and sale of embryos has begun, which poses a series of ethical questions that have received little scholarly attention.

## RESEARCH

### GYNECOLOGY

#### 171 Contraceptive counseling and postpartum contraceptive use

Lauren B. Zapata; Sarah Murtaza; Maura K. Whiteman; Denise J. Jamieson; Cheryl L. Robbins; Polly A. Marchbanks; Denise V. D’Angelo; Kathryn M. Curtis

Postpartum contraceptive use, including use of more effective methods, was highest when contraceptive counseling was provided during both prenatal and postpartum time periods.

#### 174 Impact of prolapse meshes on the metabolism of vaginal extracellular matrix in rhesus macaque

Rui Liang; Wenjun Zong; Stacy Palcsey; Steven Abramowitch; Pamela A. Moalli

The heavier, less porous, and stiffer mesh Gynemesh PS increased the catabolism of collagen and elastin in the vagina, characterized by increased matrix degradation with increased matrix metalloproteinases.

#### 177 Beyond usual care: the economic consequences of expanding treatment options in early pregnancy loss

Vanessa K. Dalton; Angela Liang; David W. Hutton; Melissa K. Zochowski; A. Mark Fendrick

Expanded treatment options for early pregnancy failure can result in lower medical expenditures without limiting access to operating room management.



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**RESEARCH** (continued from page 2A)

- 179** **Gynecologic robotic laparoendoscopic single-site surgery: prospective analysis of feasibility, safety, and technique**  
Stacey A. Scheib; Amanda N. Fader  
Robotic laparoendoscopic single-site surgery appears to be safe and feasible for the treatment of various gynecological conditions.
- 182** **Randomized controlled double-blind trial of transversus abdominis plane block versus trocar site infiltration in gynecologic laparoscopy**  
Lena El Hachem; Ethan Small; Peter Chung; Erin L. Moshier; Kathryn Friedman; Suzanne S. Fenske; Herbert F. Gretz III  
This randomized controlled double-blind trial demonstrates that neither transversus abdominis plane block technique provided a significant clinical benefit compared with trocar site infiltration with bupivacaine.
- 184** **Decreased concentration of protease inhibitors: possible contributors to allodynia and hyperalgesia in women with vestibulodynia**  
Aswathi Jayaram; Faith Esbrand; Georgios Dulaveris; Theofano Orfanelli; Ryan Sobel; William J. Ledger; Steven S. Witkin  
Vaginal protease inhibitor levels are reduced in women with secondary vestibulodynia who have constant pain.
- 186** **Same-day discharge is feasible and safe in patients undergoing minimally invasive staging for gynecologic malignancies**  
Kristine R. Penner; Nicole D. Fleming; Leah Barlavi; Allison E. Axtell; Scott E. Lentz  
Same-day discharge in patients who undergo minimally invasive surgery for gynecological cancer staging is both feasible and safe; the robotic approach appears most effective at facilitating early discharge.
- 188** **Survival differences in women with serous tubal, ovarian, peritoneal, and uterine carcinomas**  
Irina Usach; Kevin Blansit; Lee May Chen; Stefanie Ueda; Rebecca Brooks; Daniel S. Kapp; John K. Chan  
There are survival differences of serous tubal, ovarian, peritoneal, and uterine carcinomas.
- 191** **MicroRNAs in endometrial cancers from black and white patients**  
G. Larry Maxwell; Yutaka Shoji; Kathleen Darcy; Tracy Litz; Andrew Berchuck; Chad A. Hamilton; Thomas P. Conrads; John I. Risinger  
MicroRNA array analysis reveals that miR-337 is overexpressed in endometrial cancer from blacks compared to whites.
- 194** **A prospective comparison of postoperative pain and quality of life in robotic assisted vs conventional laparoscopic gynecologic surgery**  
Jenna R. Zechmeister; Tarah L. Pua; Leslie R. Boyd; Stephanie V. Blank; John P. Curtin; Bhavana Pothuri  
This prospective study comparing postoperative pain and quality of life between conventional laparoscopy and robotic assisted surgery showed no difference in women undergoing gynecologic procedures.

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## RESEARCH *(continued from page 4A)*

**196 Impact of robotic technology on hysterectomy route and associated implications for resident education**  
Peter C. Jeppson; Salma Rahimi; Leda Gattoc; Lauren B. Westermann; Sara Cichowski; Christina Raker; Emily Weber Lebrun; Vivian W. Sung; for the Fellows' Pelvic Research Network of the Society of Gynecologic Surgeons  
The proportion of vaginal hysterectomies has decreased since the adoption of robotic technology.

**199 Systematic review and metaanalysis of genetic association studies of urinary symptoms and prolapse in women**  
Rufus Cartwright; Anna C. Kirby; Kari A. O. Tikkinen; Altaf Mangera; Gans Thiagamoorthy; Prabhakar Rajan; Jori Pesonen; Chris Ambrose; Juan Gonzalez-Maffe; Phillip Bennett; Tom Palmer; Andrew Walley; Marjo-Riitta Järvelin; Chris Chapple; Vik Khullar  
Combining results from all previous gene association studies of urinary symptoms and prolapse, we demonstrate credible associations for just 2 common variants.

## OBSTETRICS

**202 Severity of influenza and noninfluenza acute respiratory illness among pregnant women, 2010–2012**  
Leslie Z. Sokolow; Allison L. Naleway; De-Kun Li; Pat Shifflett; Sue Reynolds; Michelle L. Henninger; Jeannette R. Ferber; Roxana Odouli; Stephanie A. Irving; Mark G. Thompson; for the Pregnancy and Influenza Project Workgroup  
Pregnant women with influenza were more likely than those with noninfluenza illness to report more severe subjective symptoms, fever of 38.9°C or higher, and impairment because of illness.

**205 Impact of intrauterine tobacco exposure on fetal telomere length**  
Hamisu M. Salihu; Anupam Pradhan; Lindsey King; Arnut Paothong; Chiaka Nwoga; Phillip J. Marty; Valerie Whiteman  
Our results provide the first evidence to demonstrate a positive association between shortened fetal telomere length and smoking during pregnancy.

**208 Repeated measures of urinary oxidative stress biomarkers during pregnancy and preterm birth**  
Kelly K. Ferguson; Thomas F. McElrath; Yin-Hsiu Chen; Rita Loch-Carusio; Bhramar Mukherjee; John D. Meeker  
Both 8-isoprostane and 8-hydroxydeoxyguanosine were associated with increased and decreased risk of preterm birth, respectively, in a nested case-control study of levels that were measured longitudinally across gestation.

**210 Preterm birth risk at high altitude in Peru**  
Lisa D. Levine; Gustavo F. Gonzales; Vilma L. Tapia; Manuel Gasco; Mary D. Sammel; Sindhu K. Srinivas; Jack Ludmir  
High altitude is not associated with preterm birth in Peru.

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## RESEARCH *(continued from page 6A)*

### 212 Inflammatory predictors of neurologic disability after preterm premature rupture of membranes

Jennifer Armstrong-Wells; Meghan Donnelly; Miriam D. Post; Marilyn J. Manco-Johnson; Virginia D. Winn; Guillaume Sébire

Patterns of placental pathology, maternal-fetal inflammatory response, and clinical characteristics emerge, supporting the connection between adverse neurological outcomes in infancy in pregnancies complicated by preterm premature rupture of membranes.

### 215 Outcomes of expectantly managed pregnancies with multiple gestations and preterm premature rupture of membranes prior to 26 weeks

Luchin F. Wong; Calla M. Holmgren; Robert M. Silver; Michael W. Varner; Tracy A. Manuck

Among multiples with preterm premature rupture of membranes less than 26 weeks who are expectantly managed, neonatal survival rates are low (43%), and only 17% survived without significant neonatal morbidity.

### 218 Maternal morbidity in patients with morbidly adherent placenta treated with and without a standardized multidisciplinary approach

Alireza A. Shamshirsaz; Karin A. Fox; Bahram Salmanian; Concepcion R. Diaz-Arrastia; Wesley Lee; B. Wycke Baker; Jerasimos Ballas; Qian Chen; Teelkien R. Van Veen; Pouya Javadian; Haleh Sangi-Haghpeykar; Nicholas Zacharias; Stephen Welty; Christopher I. Cassady; Amirhossein Moaddab; Edwina J. Popek; Shiu-ki Rocky Hui; Jun Teruya; Venkata Bandi; Michael Coburn; Thomas Cunningham; Stephanie R. Martin; Michael A. Belfort

A multidisciplinary strategy in the treatment of placenta accreta is associated with improved maternal outcomes.

### 221 Thromboembolism incidence and prophylaxis during vaginal delivery hospitalizations

Alexander M. Friedman; Cande V. Ananth; Eri Prendergast; Suneet P. Chauhan; Mary E. D'Alton; Jason D. Wright

Among women with vaginal births, the rate of venous thromboembolism prophylaxis was low (2.6%); during the study period, incidence of venous thromboembolism nearly doubled from 15.6-29.8 events per 100,000 delivery hospitalizations.

### 224 The impact of adoption of the International Association of Diabetes in Pregnancy Study Group criteria for the screening and diagnosis of gestational diabetes

Karli Mayo; Nir Melamed; Hilde Vandenberghe; Howard Berger

Applying the International Association of Diabetes in Pregnancy Study Group criteria to a Canadian cohort increases the gestational diabetes rate and identifies a subgroup of women at risk of adverse perinatal outcomes.

### 227 Increased glucose and placental GLUT-1 in large infants of obese nondiabetic mothers

Ometeotl Acosta; Vanessa I. Ramirez; Susanne Lager; Francesca Gaccioli; Donald J. Dudley; Theresa L. Powell; Thomas Jansson

Altered placental glucose metabolism, rather than elevated maternal glucose levels, may cause fetal hyperglycemia in large infants of obese mothers.



## RESEARCH (continued)

**229** Mode of delivery and postpartum depression: the role of patient preferences

Kathryn A. Houston; Anjali J. Kaimal; Sanae Nakagawa; Steven E. Gregorich; Lynn M. Yee; Miriam Kuppermann

Women with a strong antepartum preference for vaginal delivery who undergo cesarean delivery may be at increased risk of depression in the early postpartum period.

**232** Antepartum nonobstetrical surgery at  $\geq 23$  weeks' gestation and risk for preterm delivery

Elizabeth A. Baldwin; Kristi S. Borowski; Brian C. Brost; Carl H. Rose

Nonobstetric antepartum surgery at  $\geq 23$  weeks' gestation increased the risk of preterm delivery regardless of specific procedure type.

**234** Is universal cervical length screening indicated in women with prior term birth?

Kelly Marie Orzechowski; Rupsa Boelig; Sara Shaw Nicholas; Jason Baxter; Vincenzo Berghella

Women with prior term birth have a nonsignificant trend toward a lower incidence of cervical length  $\leq 20$  mm, compared with nulliparous women.

**236** Environmental variables as potential modifiable risk factors of preterm birth in Philadelphia, PA

Jamie A. Bastek; Mary D. Sammel; Tara D. Jackson; Meghan E. Ryan; Meghan A. McShea; Michal A. Elovitz

Neither block-group level administrative (neighborhood crime, structural decline), census (population demographics, social stress, education, and employment), nor survey (social capital) data are associated with preterm birth in Philadelphia, Pennsylvania.

**241** The risk of prelabor and intrapartum cesarean delivery among overweight and obese women: possible preventive actions

Monika Hermann; Camille Le Ray; Béatrice Blondel; François Goffinet; Jennifer Zeitlin

Inductions in primiparous women and prelabor cesarean delivery in multiparous women with no comorbidities contribute to excess cesarean deliveries among obese women and constitute possible areas for preventive action.

**244** The persistence of active smooth muscle in the female rat cervix through pregnancy

David J. Ferland; Emma S. Darios; Stephanie W. Watts

The rat cervix contains contractile smooth muscle that persists through pregnancy, and this finding suggests a change needed in the approach of pregnancy and labor physiology.

## IMAGES IN GYNECOLOGY

**247** Beware the scar

Saba H. Berhie; Rose L. Molina; Michelle R. Davis; Raymond M. Anchan; Karen C. Wang

Laparoscopic hysterectomy as definitive management of a 7-week cesarean delivery scar implantation after unsuccessful medical therapy with intraamniotic KCl and multidose methotrexate.

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## SURGEON'S CORNER

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Janelle K. Moulder; Kumari A. Hobbs; Joseph Stavas; Matthew T. Siedhoff  
Preoperative computed tomography—guided needle localization facilitates surgical excision of nonpalpable small abdominal wall endometrioma.

## LETTERS TO THE EDITORS

### 250 Early and total neonatal mortality in relation to birth setting in the United States, 2006-2009

Jessica L. Illuzzi; Susan R. Stapleton; Lesley Rathbun

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### 251 Urinary nerve growth factor in patients with symptomatic detrusor overactivity

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### 252 Diagnosing placenta accreta

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Karine Vallee-Pouliot; Patricia Janssen; Eileen Hutton

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### 255 Contraception with levonorgestrel system and risks of breast cancer

S. Alouini; G. Venslauskaitė; Z. Lubarskiene

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S. Rose Werth; Gina M. Secura; Jeffrey F. Peipert

## CORRECTION

### 246 April 2012 (vol. 206, no. 4, page 300)

The spellout of a term abbreviated in a flowchart in an SMFM Clinical Guideline on Doppler assessment of the fetus with intrauterine growth restriction, published in the Journal in April 2012, is corrected.

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