management. The levels of Beta human chorionic gonadotropin (β-hCG) are typically obtained. However, studies have demonstrated conflicting β-hCG values at which rupture may occur. With this ambiguity, inflammatory markers, such as neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR), could become helpful in diagnosing ruptured ectopic pregnancy, alongside β-hCG levels and confirmatory transvaginal ultrasound.
Method: A review of the world literature was performed to identify correlations between clinical presentations, imaging findings, β-hCG levels and still experimental, inflammatory markers as potential indicators of ectopic pregnancy rupture.
Results: Literature review showed that when the pre-operative mean β-hCG levels of ectopic pregnancies were compared, ruptured ectopic pregnancies consistently yielded statistically significantly higher values than unruptured. However, when regression analysis was used to determine β-hCG cut-off values for prediction of rupture, these numbers varied across studies. Three recent retrospective studies have shown that inflammatory markers could be possible indicators of rupture risk: higher NLR and PLR levels with cut-off values of 2.74 and 132.56 respectively were associated with elevated rupture risk. This risk was 4.5 times greater with PLR of $\geq$and 6.9 times greater with NLR $\geq$ 4.
Conclusions: Clinical presentation and transvaginal ultrasound findings are most important when predicting ectopic pregnancy rupture risk. Experimental studies demonstrate that NLR and PLR could become cost-effective surrogate markers and predictors of rupture which can be used in conjunction with β-hCG levels, clinical presentation, and transvaginal ultrasound to raise a high index of suspicion.

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Uterine Artery Pseudoaneurysm: An Iatrogenic Cause of Postpartum Hemorrhage

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Background: Peripartum and postpartum hemorrhage is a commonly feared complication that may follow obstetric and surgical procedures. After ruling out common causes such as uterine atony, there are rare etiologies to keep in mind. Uterine artery pseudoaneurysm (UAP) is a rare cause of postpartum hemorrhage following cesarean section and can also occur after dilation and curettage or hysterectomy. A pseudoaneurysm is a blood-filled cavity that communicates with the lumen of the original artery due to defective layers of the arterial wall. Arteriovenous malformation (AVM) may show a similar presentation on ultrasound, and although difficult, differentiating between the two is important. As indicated by several case reports, continued severe bleeding despite standard measures may ultimately lead to hysterectomy. The purpose of this project is to raise clinical awareness of these rare etiologies and their management.
Method: A review of the world literature was performed, with special focus on etiology, imaging findings, and treatment of UAP, and comparing UAP with uterine AVM. We also provide a case from our institution with both UAP and uterine AVM as differential diagnoses.
Results: Literature review included eleven case reports of UAP. Patients were treated successfully with embolization, and differences between UAP and AVM were highlighted. AVM is characterized by multiple fistulas between arterial branches, while UAP has a yin-yang pattern of blood flow. We illustrate these findings with our institution's case of a 41-year-old female presenting with vaginal bleeding who was subsequently treated with embolization of the spiral branch of the uterine artery.
Conclusion: Awareness of the risk of iatrogenic uterine artery damage causing severe secondary bleeding is crucial and should be considered when encountering patients with vaginal bleeding. Furthermore, differentiating between UAP, AVM, and other gynecological conditions can improve how we address such complications.

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Neonatal Resuscitation

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Introduction: Neonatal mortality is a global public health concern as it accounts for 2.5 million deaths worldwide and represent almost $^1/_2$ of mortality in children less than 5 year old. Globally, preterm births is number 1 cause for neonatal deaths. About 10% of newborns require assistance to start breathing at birth with only <1% needing extensive measures such as CPR & medications. Execution of neonatal resuscitation can avert 30% of newborn deaths & 10% preterm deaths in 1st month of life, thus making it a very important tool for health providers. In 2015, the American Heart Association (AHA) reviewed the latest research and provided updates to Neonatal Resuscitation guidelines.
Discussion: When a baby is born, 3 questions should be answered: 1) does the baby have good tone, 2) is the baby breathing, 3) is the baby term? If any of the questions yield an answer of no, then the initial step of stabilization of the neonate begins with aims to maintain normothermia, open & clear an obstructed airway and suction if necessary. Due to neonatal physiology, ventilation is paramount to a good resuscitation response as indicated by increasing heart rate. At any point if ventilation if not adequate or if heart rate falls below 100, the healthcare provider should continue to more advanced stages of resuscitation including positive pressure ventilation, possible need for intubation and in more rare instances, use of CPR and vasopressor or volume therapy if HR is <60 after ventilation is establish. During this 2015 review by the AHA, certain aspects of the guidelines were examined and updated. Hypothermia was recognized to correlate with poor neonatal outcomes thus emphasis on maintaining normothermia was addressed. The AHA also cited insufficient data to support use of delayed cord clamping for neonates requiring resuscitation. And treatment for meconium was also updated to include avoiding the routine use of immediate intubation for this population.
Conclusion: The need for a good risk assessment, team approach to coordination of care and delivering systematic treatment to the distressed newborn is key to resuscitation efforts that reduce morbidity and mortality. Healthcare providers play an important role for newborns during the critical stage of transition after birth. The AHA guidelines and algorithm should be followed and practiced continually so that healthcare providers feel comfortable and proficient with these important steps in newborn care.
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Covid-19 Maternal-Neonate Vertical Transmission Rates in Los Angeles County

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Covid-19 was first identified as a novel coronavirus in December 2019 originating from the Hunan Seafood Wholesale Market in Wuhan, Hubei Province China. This is a group of large, enveloped single-stranded RNA viruses named for their coronal shape. The first local transmission of this virus was confirmed on February 26, 2020 in California when 60 imported cases were known to be in the US. As cases ballooned in America and globally, by May 11, 2020 there were over 4.1 million cases worldwide, and California had 88444 cases of Covid-19 with 3630 deaths, with the majority located in Los Angeles County then (over 32000 cases and 2042 deaths). At that time, 134 pregnant women in LA County had tested positive for the virus. Of the Covid-19 + pregnant women who had given birth (24) to that date, none of their newborns tested positive for the virus. In the 3 months since then cases have continued rising exponentially, with 20,728,874 cases worldwide and 5,234,800 cases in the US. As California, and specifically LA County's rates continue to rise with 594,810 and 214,283 cases respectively now, the age demographics of infected individuals has dropped and now 18- 49 year olds make up 57% of people testing positive in the County. This has led to an increase in pregnant women diagnosed with the novel coronavirus in LA County, with 1120 cases documented as of August 8, 2020. Of these women who have given birth (61% vaginal, 26% Cesarean, and 13% unknown delivery mode), none of the 257 neonates have tested positive at birth for Covid 19. Given that even with a larger sample size none of the neonates tested positive for coronavirus, the evidence does not suggest that Covid 19 can be transmitted vertically at this time.
Key Words: Vertical Transmission, Covid 19, LA County

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Table 1.

Coronavirus numbers	May 11, 2020	Aug 10, 2020
California	88444	594810
LA County	32258	214283
Pregnant women in LA County	139	1120
Neonates in LA County	0	0

Shifting Outcomes for Cervical Ectopic Pregnancies Using Characteristic Transvaginal Ultrasound Findings

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Learning Objective(s): At the conclusion of this project, participants will be able to:
1. Understand the pathophysiology of cervical ectopic pregnancies.
2. Identify radiographic findings specific for cervical ectopic pregnancies.
3. Compare ultrasound findings of cervical ectopic pregnancies to other similarly presenting conditions.
4. Utilize informative graphics to assist in the proper diagnosis of cervical ectopic pregnancies

Background: Complications from ectopic pregnancies are the leading cause of mortality in women of reproductive age. Although cervical ectopic pregnancies account for just 1% of all ectopic pregnancies, they are associated with increased rates of morbidity and mortality due to initial misidentification. Currently, no updated established diagnostic criteria are utilizing transvaginal ultrasound for cervical ectopic pregnancies. Successful management of cervical ectopic pregnancies and prevention of adverse outcomes requires an early and accurate diagnostic criterion.

Method: A detailed systematic review of the world literature was done to identify characteristic findings on transvaginal ultrasound for cervical ectopic pregnancies as well as other similar presentation profiles.

Results: A literature review indicated that cervical ectopic pregnancies are often initially diagnosed as abortion, early low-lying intrauterine pregnancies, and cervical b-HCG producing malignancies due to similar clinical and sonographic findings. Inclusion and exclusion criteria were developed to strengthen the diagnostic power for cervical ectopic pregnancies in comparison to other differentials. This information was used to establish a diagnostic clinical flow chart to assist physicians. Subsequently, a particular case at Howard University Hospital of a 37-year-old G4P1021(G4P1A2) presenting with a cervical ectopic pregnancy was highlighted and used to demonstrate findings from the literature.

Conclusion: Transvaginal ultrasound diagnostic criteria outlined for cervical ectopic pregnancies and differentiation from other similarly presenting conditions are essential to the preservation of reproductive potential and other favorable outcomes for women of reproductive age. Ultimately, this can result in improved outcomes for cervical ectopic pregnancies.

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Clinical Comparison between Ruptured Ovarian Cyst and Ovarian Ectopic Pregancy Using Radiographic Imaging

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Background: A ruptured ovarian cyst is a common cause of acute pelvic pain in women. These cysts can be filled with fluid and can rupture, mimicking signs of a ruptured ectopic pregnancy. When considering a ruptured cyst it is important to differentiate it from an ovarian ectopic pregnancy, and ultrasound can help differentiate ruptured cysts from ectopic pregnancies.

Methods: A review of the world literature was performed and imaging such as doppler and transvaginal ultrasounds were explored to identify and differentiate ovarian cysts and ectopic pregnancies.

Results: The literature review showed three main criteria where imaging can help to differentiate a ruptured ovarian cysts and ovarian ectopic pregnancy.

Vascularity there is little or no vasculature present in an ovarian cyst, and if any exists it is localized to the wall of the cyst. The peripheral hypervascularity is described as a "ring of fire" on Doppler. When an ovarian cyst ruptures, it can form an organized hematoma and a complex vascular adnexal mass.

Acoustic Enhancement: Cysts show acoustic enhancement posteriorly.

Wall Thickness: When compared to an ectopic pregnancy, the wall of the cyst is thinner and more hypoechoic than the ectopic ovarian pregnancy.

B-hCG levels can also be used to differentiate the two entities, however this is unreliable before days 6-8 post ovulation.

Conclusion: Transvaginal ultrasounds was proven to be an effective diagnostic tool in differentiating between ectopic pregnancies and ovarian cysts. The proper diagnosis of these two conditions are critical due to the differing treatments. Ectopic pregnancies may be treated medically with methotrexate, or even surgically in a hemodynamically unstable patient presenting with ruptured ectopic pregnancy. In contrast, surgery is often not indicated for ruptured cysts, and patients are treated conservatively and simply monitored, but may receive an unnecessary laparotomy if they are misdiagnosed.

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Identifying the Various Risk Factors for Recurrent Ectopic Pregnancy

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Introduction: Ectopic pregnancy is a leading cause of maternal mortality in the first trimester. Although common risk factors for primary ectopic pregnancy are known, less is known about risk factors for recurrent ectopic pregnancy.

Methods: A review of the world literature was carried out to identify risk factors associated with ectopic pregnancy recurrence in order to improve patient education and guide management of patients presenting with ectopic pregnancies.

Results: Prior miscarriage (Relative risk [RR] = 3.41), a prior evacuation of retained products of conception (RR = 2.73), consanguinity of the fetus (RR = 2.15) and prior pelvic inflammatory disease (RR = 2.93) are associated with a greater risk of recurrent ectopic pregnancy (REP). A history of abortion also increases risk of REP, with odds ratio increasing by the number of abortions performed (OR for one abortion = 21.576, P = 0.001; OR for two abortions = 36.794, P < 0.001, OR for three abortions or more = 119.013, P < 0.001). Certain forms of REP management are associated with a higher risk of REP. Surgical management with salpingostomy had a 3.13 RR while salpingectomy had a 0.32 RR. Laparoscopic surgical intervention had a 0.40 RR while laparotomy had a 2.51 RR.

Additionally, certain patient demographics have shown to impact REP risk. Individuals with REP were significantly older than those with primary ectopic pregnancy (32.2 vs 30.5 years of age respectively) and REP was more often seen in individuals with a lower educational level (high school and below, odds ratio [OR] =4.183, 95% confidence interval [CI] 1.311−13.344 P = 0.016). REPs present significantly earlier than primary EP as well (5.99 vs. 6.52 weeks, respectively).

Conclusion: An understanding of the risk of recurrence of ectopic pregnancies can help identify populations that are most vulnerable and inform patient and provider decisions when choosing management plans.

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Safety and Efficacy of Total Vaginal Reconstruction in Elderly Women with Medical Co-Morbidities

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Objective: To compare colpocleisis and total vaginal reconstruction in elderly women with medical co-morbidities.

Methods: This is a retrospective cohort study of patients who underwent pelvic organ prolapse surgery between November 2015 and December 2018. Demographic information, operative data, and short-term outcomes were evaluated.

Results: One hundred three patients qualified for the study (23 colpocleisis, 80 total vaginal reconstruction). Patients who chose colpocleisis were older (75.35 ± 6.30 years vs. 71.28 ± 4.83 years, $P = 0.01$) and were more likely to have a prior hysterectomy (39% vs. 16%, $P = 0.02$). Patients who had colpocleisis had similar severity of prolapse compared to those who chose total vaginal reconstruction (Stage 3.57 ± 0.73 vs. 3.25 ± 0.72, $P = 0.08$). Patients who chose total vaginal reconstruction had greater blood loss (200 ± 132 ml vs. 106 ± 105 ml, $P = 0.01$) but did not require more transfusions. While procedure time was greater for those who had total vaginal reconstruction (247 ± 54 min vs. 168 ± 34 min, $P = 0.01$), hospital length of stay were similar (1.13 ± 0.34 days vs. 1.67 ± 2.48 days, $P=0.06$).