Anesthetic Considerations in a Ruptured Ectopic with a Negative B-HCG

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Ectopic pregnancy is often thought of as a differential diagnosis of abdominal pain in women of child-bearing age. The diagnosis is usually made via a combination of history and physical exam findings along with transvaginal ultrasound and an elevated beta-HCG (beta-human chorionic gonadotropin) level. Despite the major advances in the diagnosis and management of ectopic pregnancies, an accurate diagnosis can prove to be challenging as is demonstrated by our case.

A 29 year old G0P0 female with a past medical history of hypertension and morbid obesity (BMI 56) presented to our institution complaining of abdominal pain. She reported a one-day history of diffuse abdominal pain that started in the suprapubic region and radiated to the right lower quadrant. The pain was described as severe with no alleviating or aggravating factors. She also reported subjective fevers, chills, and nausea and vomiting. She was not tolerating anything by mouth and her last bowel movement was the day prior. Patient denied using any form of contraception. However she did admit to a history of irregular menses but denied vaginal discharge or history of ovarian cysts. Upon arrival to the emergency center, patient had a blood pressure of 93/46 (MAP 57), heart rate of 110, lactic acid level of 6.2, WBC of 16 and a CT scan showed free fluid in the abdomen and difficulty visualizing the appendix. She had difficulty breathing and her oxygen saturation was 95% on 2L of nasal cannula. Due to the ambiguous peritoneal signs, OB/GYN was consulted for a possible ruptured ovarian cyst. Beta-HCG as well as transvaginal ultrasound were negative. Per OB/GYN the patient’s exam and lab findings did not suggest a gynecological etiology. The surgical team took the patient to the operating room for a diagnostic laparoscopy and it was noted that she had hemoperitoneum and a suspected ectopic pregnancy. OB/GYN was reconsulted intraoperatively and hemoperitoneum was evacuated and salpingectomy performed. Pathology dated the ectopic at 6 weeks gestational age. The patient’s postoperative course was complicated by elevated blood glucose levels (in the low 200s) and a HbgA1c of 6.5.

Although there were no anesthetic complications during the patient’s surgery, the ruptured pregnancy does have many implications in the patient’s management. The pregnant woman experiences well-known physiological changes during pregnancy. Perhaps the most striking being an increase in oxygen consumption and a decrease in functional residual capacity which can lead to a rapid decline in oxygenation even during episodes of brief apnea. Additionally, changes in the airway, such as reduced size of the glottis opening, can make a seemingly straightforward intubation problematic. Furthermore, there is an increased risk of aspirating gastric contents while pregnant. Therefore, it is extremely important to consider these women as a full stomach when formulating the induction plan for anesthesia. These physiologic changes are hormone driven and seen in early gestation ages and can become complicating factors during the administration of
anesthesia. This case highlights the importance of considering all possibilities in the differential diagnosis when formulating an anesthetic plan, taking into account potential aberrancies and falsities inherent in so-called â€œgold standardâ€ diagnostic tests such as beta-HCG.