

Nursing Process Considering Advanced Maternal Age and Other Factors

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M.W. is a 41 year old Caucasian female patient from the Stark County Women's Clinic. Patient's only known allergies are to codeine and macadamia nuts. The patient is a full code. M.W. gave birth to an 8 pound 3 ounce baby girl via cesarean section, which is the "birth of fetus accomplished by performing a surgical incision through maternal abdomen and uterus," (Davidson, London, & Ladewig, 2008, p. 1210), on February 14, 2012. She is a gravida 2, para 1, living 1. Gravida is defined as "any pregnancy, regardless of duration, including present pregnancy" (Davidson et al., 2008, 338). Para is "birth after 20 weeks gestation, regardless of whether the infant is born alive or dead" (Davidson et al., 2008, 338). Her estimated due date (EDD) was February 17, 2012, and she was scheduled for a cesarean section due to suspected macrosomia (which according to Davidson et al., 2008, is infant weight of more than 4500 g (p. 732)) as determined by ultrasound images. M.W.'s baby was born at 39 weeks and 4 days gestation (defined as "the number of weeks since the first day of the last menstrual period," Davidson et al., 2008, p. 338).

We chose M.W. as our case study patient for many reasons. She had an extensive medical history including hypothyroidism, herpes simplex virus, infertility, advanced maternal age, and possible macrosomic baby. Also, her first pregnancy resulted in a spontaneous abortion, or miscarriage, as indicated by her chart. An abortion is a "birth that occurs before 20 weeks' gestation or the birth of a fetus- newborn who weighs less than 500g" (Davidson et al., 2008, p. 318). We thought it would be interesting to see how all of these conditions affected the pregnancy. Also, M.W. was very friendly, was willing to answer questions, and was very easy to communicate with.

The purpose of the paper is to describe the patient's medical and surgical history, specifically her obstetric history. Assessment data from M.W. and her daughter will be presented. We will identify her medication history and laboratory results. We will also describe priority nursing diagnoses for M.W. as well as her baby, and then provide goals for each diagnosis and the nursing interventions we performed.

Demographics

M.W. is a 41 year old Caucasian female. She is married and lives in a house with her husband. This is their first child together; however, the father does have a 22 year old son from a previous relationship. M.W. has a doctorate degree, and is a communications professor at a local college. Her husband has his master's degree and also has a stable occupation. Both M.W. and her husband contribute equally to household duties. They expressed no financial concerns. Both she and her husband identify themselves as being Christians and attend church locally on a regular basis. M.W.'s developmental level is appropriate for her age and educational level.

Medical History

M.W.'s family history consists of diabetes mellitus in the maternal grandfather and prostate cancer in her father. Her own medical history is extensive, including hypothyroidism, herpes simplex virus, history of infertility, Epstein Barr Virus, advanced maternal age, candidiasis, and possible macrosomic baby. Her surgical history includes orthopedic surgery on her right foot, wisdom teeth removal, Lasik eye surgery, vulvular biopsy, and mole removal from the breast, back, and thigh (all of which were benign), and a loop electrosurgical excision procedure. The patient denies smoking, drug, or alcohol use during pregnancy. The patient has

received a flu vaccine, but refused the pneumococcal vaccine as well as the tetanus, diphtheria and pertussis (Tdap) vaccination. Patient's blood type is A negative.

Pathophysiology

The pathophysiology for M.W. conditions will be discussed as well as how they can affect pregnancy and/or the fetus. Medical conditions that affect her pregnancy include: history of infertility, hypothyroidism, loop electrosurgical excision procedure, possible macrosomic baby, candidiasis, advanced maternal age, infection with Epstein Barr, and infection with Herpes.

Herpes Simplex Virus

According to Corey & Wald, 2009, "an estimated 25-65% of pregnant women in the United States have genital infection with herpes simplex virus." Herpes genitalis is caused by the Herpes Simplex Virus (HSV) (Davidson et al., 2008, p. 113). Once infected with HSV, the patient may have recurrent outbreaks and will remain infected throughout their life (Davidson et al., 2008, p. 115). There are two types of HSV and both are treated with the same medication. Type 2 of the Herpes Simplex Virus is the cause of most cases of recurrent genital herpes and can be spread via oral, vaginal, or anal sex and also through skin-to-skin contact with a site of infection (Davidson et al., 2008, p. 115). The primary outbreak of herpes genitalis is distinguished by blister-resembling lesions appearing in the genital area hours to days after exposure to the virus which eventually burst painfully into "open, ulcerated lesions," (Davidson et al., 2008, p. 116). During the primary outbreak, the patient may also exhibit or describe flulike symptoms (general malaise, etc.) and genital pruritus or tingling. The primary outbreak is, in general, the longest and most severe. The timing of the recurrence of outbreaks depends on the

individual and has a lot of variability. Recurrence of outbreaks may be triggered by emotional stress, menstruation, ovulation, pregnancy, frequent of vigorous intercourse, poor health status, tight clothing and/or overheating (Davidson et al., 2008, p. 116). No cure exists for herpes but medications may be prescribed for pain or to prevent secondary infection. It is recommended that the genital area should be kept clean and dry; also the patient should avoid tight clothing and should wear cotton underwear to increase healing. The lesions can and will heal without treatment; most patients seek medical attention for the pain associated with the lesions during the primary outbreak. The most commonly prescribed medications for genital herpes are oral acyclovir, valacyclovir, or famciclovir. These medications may be used in the third trimester to “reduce the frequency of cesarean births by decreasing the incidence of recurrences at term,” (Davidson et al., 2008, p. 116). If a herpes infection is present in the genital tract of a woman during childbirth, the newborn can become infected and other complications will ensue (Davidson et al., 2008, p. 116). Neonatal complications include increased risk of spontaneous abortion in the first trimester, preterm labor, intrauterine growth restriction, and neonatal infection. If the woman has a primary or recurrent outbreak of genital herpes near or during labor and delivery or any symptoms indicating an outbreak, a cesarean section is indicated because of the significant risks infection poses to the newborn (Davidson et al., 2008, p. 532). Corey & Wald, 2009 express that:

Most cases of genital HSV infection in women occur without signs or symptoms of disease and are associated with cervical viral shedding. Despite the frequent exposure to HSV during birth, neonatal herpes develops in less than 1% of infants delivered vaginally to women with HSV-2 shedding at term. The discrepancy between the high shedding rate among women with established HSV-2 infection

and the low neonatal-transmission rate suggests a role of transplacental antibodies in abrogating the risk of infection.

“Most neonatal infections result from exposure to HSV in the genital tract during delivery, although in utero and postnatal infections occasionally occur,” (Corey & Wald, 2009). Vaginal birth is possible if the woman has no lesions and no symptoms of active disease at the time of childbirth. According to Corey & Wald, 2009, “the risk of transmission is significantly higher among women who acquire genital infection with HSV-1 or HSV-2 during pregnancy than among women with long-standing HSV-2 infection in whom the virus is reactivated in the genital tract at term (25 to 50% vs. <1%)” but most clinical-management strategies for HSV infections are directed towards women who have established HSV infection. An infected infant typically does not exhibit symptoms for 2-12 days. Possible signs and symptoms of an infected neonate include fever, hypothermia, jaundice, seizures, and poor feeding. Lesions may or may not be present in infected infants. Infected infants are also treated with acyclovir (Davidson et al., 2008, p. 532). It is difficult to determine what women may or may not be at risk for HSV infection and knowledge of infection is needed in order to decrease the risk of transmission (Corey & Wald, 2009).

Epstein Barr Virus

Epstein Barr Virus (EBV) is a herpes virus that causes infectious mononucleosis and is linked to Guillain-Barre syndrome, Hodgkin’s disease, and multiple sclerosis. EBV “establishes a lifelong dormant infection in some cells of the body’s immune system,” (National Center for Infectious Disease, 2006). Higgins et al., 2007, found that “the prevalence of EBV seropositivity was significantly increased among females, older students, those who had lived in tropical

countries, those with siblings, and those who were sexually active, particularly if they had had numerous sex partners.” According to Higgins et al., 2007, sexual activity increased the risk of type 2 infections, but the increase in risk with increased number of sex partners was less consistent than for type 1 infections. No specific treatment for infectious mononucleosis and EBV infection is available.

Advanced Maternal Age

Advanced maternal age is defined as “age greater than 35,” (Davidson et al., 2008, p. 342). M.W. is 41 years old and being older than 35 places her at risk for increased risk of preeclampsia, increased risk for cesarean birth, and psychosocial issues as well as increased risk for complications due to gestational diabetes, hypertensive disorders of pregnancy, abruption placenta, and placenta previa (Davidson et al, 2008, p. 342; Alice Yuen & Chung Fan, 2011, p. 1142). The mother is also likely “to have a higher incidence of preterm delivery, stillbirth, and postpartum hemorrhage, and increased rates of spontaneous abortion, growth retardation, low-birth-weight infant and malformation, especially resulting from chromosomal abnormalities,” (Alice Yuen & Fan, 2011, p. 1142). Her fetus/neonate has an increased risk of congenital anomalies and of chromosomal issues (Davidson et al., 2008, p. 342). According to Alice Yuen & Chung Fan, 2011, women who become pregnant at an advanced age are more likely to have tertiary education, to have a higher monthly income and to make positive health behavior decisions during pregnancy, but also they are more likely than younger mothers to be concerned about the possibility of miscarriage and the physical demands of caring for their infant, about their recovery after childbirth, about the possibility of Down’s Syndrome, and about possible structural defects of their fetus (p. 1141). “Previous studies have reported that advanced maternal age women are prone to experiencing intense levels of anxiety because of the potential

increased risk of fetal chromosomal abnormality,” but according to Alice Yuen & Chung Fan, 2011, they found in their study that women of advanced maternal age had a slightly lower level of anxiety, possibly due to the amount of extra testing that older mothers receive to ensure a healthy pregnancy (testing for Down’s syndrome, etc.) (p. 1148). Mothers who are older tend to be more mature and have a larger knowledge and experience base making them more likely to deal with pregnancy and related issues in a more positive manner (Alice Yuen & Chung Fan, 2011, p. 1143). They also tend to have more stable relationships. “Older women were reported to be more likely to breastfeed than younger women because of age-related attributes such as emotional maturity, wisdom and experience of life,” (Alice Yuen & Chung Fan, 2011, p. 1143).

Vulvovaginal Candidiasis

Vulvovaginal candidiasis (VVC) is caused by the organism *Candida albicans* (Davidson et al., 2008, p. 113). The organism that causes the infection is commonly found on skin, mucous membranes, gastrointestinal tract, and vagina but an increase in the number of the organisms may cause symptoms to develop (Center for Disease Control and Prevention, 2012, *Candidiasis*). It is more commonly known as a “yeast infection” and is a very common vaginal infection. *Candida albicans* can also cause infection in the mouth and other parts of the body.

“Predisposing factors to yeast infections include glycosuria, use of oral contraceptives, use of antibiotics, pregnancy, diabetes mellitus, and the use of immunosuppressant drugs,” (Davidson et al., 2008, p. 111). “VVC occurs more frequently and more severely in people with weakened immune systems,” (Center for Disease Control and Prevention, 2012, *Candidiasis Risk & Prevention*). Changes in the acidity of the bodily environment (the vagina) or changes in hormonal balance can allow for increased *Candida* multiplication (Center for Disease Control and Prevention, 2012). Potential signs and symptoms of VVC include thick, white, curdly

discharge, severe itching, dysuria, dyspareunia (Davidson et al., 2008, p. 111). Pregnant women with VVC are treated with topical azole preparations (butoconazole, clotrimazole, miconazole, nystatin, terconazole, or tioconazole) applied locally to the vagina for 7 days. If the mother has an active infection at the time of vaginal birth, the fetus may develop thrush (Davidson et al., 2008, p. 535). Women with frequent infections may benefit from wearing cotton underwear and or oral or intravaginal probiotics (Center for Disease Control and Prevention, 2012, *Candidiasis Risk & Prevention*).

Possible Neonate Macrosomia

M.W.'s baby was considered to be macrosomic as visualized by ultrasonography leading to the scheduling of a cesarean section. Macrosomia is considered to be any infant weighing greater than 4500 grams (Davidson et al., 2008, p. 732). An obese woman is 3 to 4 times more likely to have a macrosomic baby (Davidson et al., 2008, p. 732). Diagnosing fetal macrosomia is difficult, can be inaccurate and often includes ultrasound biometry and/or clinical palpation (Davidson et al., 2008, p. 563). Obstetric sonography has been estimated to be accurate in predicting fetal weight 15% to 79% of the time and clinical palpation is estimated to be accurate 40% to 52% of the time (Davidson et al., 2008, p. 563).

When macrosomia is suspected, the medical team must anticipate birth-related complications for both the mother and infant. Maternal complications and risks include dysfunctional labor, increased risk for postpartum hemorrhage, uterine rupture, laceration and/or episiotomy, puerperal infection, increased incidence of vacuum and forceps use (Davidson et al., 2008, p. 732). Other maternal complications may include prolonged first and second stage of labor, perineal trauma, emergency cesarean section, and prolonged hospital stay (Pundir &

Sinha, 2009, p. 202). Infant complications include general birth trauma, shoulder dystocia, fractured clavicle, and brachial plexus injuries, or Apgar score less than 4, birth asphyxia, Erb's palsy, and potential admission to NICU (Pundir & Sinha, 2009, p. 202). The most serious complication is shoulder dystocia which is "an intrapartum event that occurs when the infant's head has been delivered, but the shoulders remain wedged behind the mother's pubic bone, causing a difficult birth of the infant with potential for maternal or fetal injury," (Davidson et al., 2008, p. 562). If the infant is macrosomic, a cesarean birth may be indicated in order to decrease the incidence of potential complications. Vaginal birth is not contraindicated in cases of fetal macrosomia, but "a trial of labor without previous vaginal birth when the fetus is macrosomic increases the risk of uterine rupture," (Davidson et al., 2008, p. 563).

Loop Electrosurgical Excision Procedure

A Loop Electrosurgical Excision Procedure (LEEP) is used for cervical, vaginal, or vulvular intraepithelial neoplasia or abnormal tissue growth. These abnormal tissues are usually found using a colposcopy (which is "direct visualization and examination of the cervix," Davidson et al., 2008, p. 141) and Papanicolaou smear (which screens "for the presence of cellular abnormalities by obtaining a sample containing cells from the cervix and the endocervical canal," Davidson et al., 2008, p. 139). The LEEP uses "a small electrically hot wire loop to excise the entire lesion," (Davidson et al., 2008, p. 142). It is performed on an outpatient basis with local anesthesia, has minimal complications, and is mostly painless and bloodless (Davidson et al., 2008, p. 142).

Hypothyroidism

According to Davidson et al., 2008, hypothyroidism is the inadequate secretion of thyroid hormone which is evidenced by decreased t4, elevated TSH, lowered basal metabolic rate, and enlarged thyroid gland (p. 476). Some symptoms are lack of energy, weight gain, cold intolerance, dry skin and constipation (Davidson et al., 2008, p. 476). The mother should continue taking her replacement therapy medication at the same dosage as prior to pregnancy. A weekly nonstress test may be order after 35 weeks gestation (Davidson et al., 2008, p. 476). The woman with hypothyroidism trying to become pregnant should stabilize her levels prior to conception. If the mother does not have stabilized levels or if her hypothyroidism remains untreated, the risk of fetal loss increases 50% and there is an increased risk of congenital goiter or true cretinism (Davidson et al., 2008, p. 476). “Neonatal thyroid function testing should be considered in addition to national thyroid-stimulating hormone (TSH) screening; The diagnosis is confirmed if high TSH and low free T4 are present,” (Hawdon & Hagmann, 2011, p. 560). Growth should be evaluated as well. Kennedy et al., 2010 expresses that a woman with autoimmune thyroid disease experiences a two-fold increase in the risk for infertility (p. 774). “Endometriosis, an estrogen-dependent condition in which endometrial tissue is present in abnormal locations, affects 6-10% of women, but is present in up to 50% of those with pelvic pain or infertility,” (Kennedy et al., 2010, p. 775). Thyroid disorder increases the patient’s risk of spontaneous abortion (Davidson et al., 2008, p. 343).

History of Infertility

M.W. has a history of infertility. According to Davison et al., 2008, p. 259, infertility is “lack of conception despite unprotected sexual intercourse for at least 12 months.” Infertility affects the individual and the couple in many ways. Infertility can be caused by a number of

different conditions and circumstances and the specific reasons behind M.W.'s infertility are unknown to us.

Obstetric History

M.W. is a gravida 2, para 1, abortion 1, living 1. Her first pregnancy resulted in a miscarriage. She delivered this baby at 39 weeks and 4 days gestation on February 14, 2012 at 0725 by cesarean section. The baby was appropriate for gestational age (AGA) at 8 pounds 3 ounces. AGA infants are "those between the 10th percentile and 90th percentile growth curve" (Davidson et al., 2008, p. 929). "A newborn is assigned to a category depending on birth weight, length, occipital-frontal circumference, and gestational age," (Davidson et al., 2008, p. 929). M.W.'s pre-pregnancy weight was 144 lb, and her weight prior to delivery was 183 lb (83kg).

According to Black & Hawks, 2009, Body Mass Index (BMI) is: (p. 564)

gaining favor as the accepted standard for determining desirable body weight. The BMI standardizes weight for height. A desirable BMI range associated with good health is between 19 and 24.9. A BMI of less than 18.5 is categorized as underweight. A BMI between 25 and less than 30 is considered overweight, and a BMI of 30 or greater is considered obese (p. 564).

The patient's Body Mass Index prior to delivery while pregnant was 35.92. Her pre-pregnant BMI was 28.1. She gained a total of 40 lbs during her pregnancy.

Dixit & Girling, 2008, discuss that "there is a greater incidence of obesity in women of childbearing age," (p. 14). "A retrospective study looking at pregnancy outcomes in obese and normal-weight women claimed that a weight gain of 7-11.5 kg (15-25 lb for obese women and

11.5-16 kg (25-35 b) for normal weight women was associated with optimal fetal growth,” (Dixit & Girling, 2008, p.16). M.W. gained 40 lbs in pregnancy and was overweight prior to and during pregnancy. M.W.’s increase in weight of 40 lbs seems high according to Dixit & Girling’s standards. Obese mothers may have an increased risk of postpartum hemorrhage, incidence of cesarean section, deep vein thrombosis, and pulmonary embolism (Dixit & Girling, 2008, p. 20). “Maternal obesity is associated with an increased risk of failure to initiate lactation and decreased duration of breast-feeding, which is disappointing as the 1,000 kcal daily expenditure would help with postnatal weight control,” (Dixit & Girling, 2008, p.20). M.W. had her first menstrual period at the age of 15 years. Her last menstrual period before pregnancy was May 10, 2011. Therefore, using Naegele's rule (which is “a method of determining the estimated date of birth: after obtaining the first day of the last menstrual period, subtract 3 months and add 7 days,” (Davidson et al., 2008, p. 1219)), her estimated date of delivery would be February 17, 2012. The patient and her husband were very excited about the baby, and attended parenting classes to prepare from the birth of their new baby.

M.W.’s prenatal history shows some abnormalities and causes for concern. Her prenatal history showed candidiasis infection during pregnancy. She tested positive for herpes simplex virus (HSV). She also had an abnormal cervix, LEEP procedure, and had hyperemesis (which is described as “excessive vomiting during pregnancy, leading to dehydration and starvation,” (Davidson et al., 2008, p. 1216)). She also has a history of infertility. All prenatal laboratory data can be found in the chart is shown below.

Test	Normal Result	Result	Analysis
GC (Gonorrhea/Chlamydia)	Negative	Negative	Normal finding
Human Immunodeficiency Virus (HIV)	Negative	Negative	Normal finding

Hepatitis B	Negative	Negative	Normal finding
Group B Streptococcus (GBS)	Negative	Negative	Normal finding
HBsAg (Hepatitis B)	Negative	Negative	Normal finding
Antibody Screen	Negative	Negative	Normal finding
VDRL/RPR (Syphilis)	Nonreactive	Nonreactive	Normal finding
Urine Culture and Sensitivity	Negative	Negative	Normal finding
Rubella (German measles)	Immune	Immune	Normal finding
Chlamydia	Negative	Negative	Normal finding
Gonorrhea	Negative	Negative	Normal finding
PAP screen	Negative	ASC-US (atypical squamous cells of uncertain significance)	Mildly abnormal. May indicate infection, cervical swelling, or cervical cell changes caused by HPV. Refer to physician for follow-up or to perform colposcopy.
1 Hour Glucose	70-110 mg/dL	103	Glucose level WNL.
Blood Type	-----	A-	Check for anti-Rh antibodies, Check partners blood type, Rh
Hgb	12-16 g/dL	13.1 g/dL	Normal finding
Hct	38-47%	38.4%	Normal finding

There was no triple screen test data found in the chart. Due to her medical history and her advanced maternal age, the potential for complications during pregnancy and delivery were identified by the physician.

M.W. was prescribed a variety of medications during her pregnancy. She took a prenatal vitamin, phernergan, terazol, valtrex, rhogam, and levothyroxine. These medications will be discussed in the medication table below.

M.W. was scheduled for a Cesarean section due to suspected macrosomia. She was NPO, or nothing by mouth, for 8 hours prior to surgery. The patient had experienced Braxton Hicks contractions (described as “intermittent painless contractions of the uterus that may occur every 10-20 minutes; occur more frequently toward the end of pregnancy and are sometimes mistaken for true labor signs,” (Davidson et al., 2008, p. 1210)) prior to labor but no other contractions or signs of labor were present. She had been given Nubain 2.5 milligrams intravenously every 2 hours as needed for itching. Mefoxin was given preoperatively. She had Lactated Ringers solution running at 125 milliliters per hour. She had been given spinal anesthesia (Astromorph). The fetus was in cephalic presentation (“birth in which the fetal head is presenting against the cervix,” (Davidson et al., 2008, p. 1210) with an external monitor placed. Vacuum extraction (which is defined as, “an obstetric procedure used to assist in the birth of a fetus by applying suction to the fetal head with a soft suction cup attached to a suction bottle or pump by tubing and placing the device against the occiput of the fetal head,” (Davidson et al., 2008, p. 1225)) was used resulting in the presence of caput succedaneum (which is “swelling or edema occurring in or under the fetal scalp during labor,” Davidson et al., 2008, p. 1210) on the left side of the newborn’s head. Stork bites (also known as Telangiectatic nevi are “small clusters of pink-red spots appearing on the nape of the neck and around the eyes of infants; localized areas of capillary dilatation,” Davidson et al., 2008, p. 1224) were present as well. Oxytocin was given (20 grams in 1000 milliliters which was running at 999 milliliters per hour after the delivery of the placenta. The placenta is a “specialized disk-shaped organ that connects the fetus to the uterine wall for gas and nutrient exchange,” (Davidson et al., 2008, p. 1221). The newborn’s Apgar score was 9 as indicated by the chart (whether it was the 1 minute or 5 minute we are unsure). The Apgar score is “a scoring system used to evaluate newborns at 1 minutes and 5

minute after birth; the total score is achieved by assessing five signs: heart rate, respiratory effort, muscle tone, reflex irritability, and color; each of the signs is assigned a score of 0, 1, or 2; the highest possible score is 10,” (Davidson et al., 2008, p. 1209).

Maternal Assessment

The patient was first day postpartum (which means “after childbirth,” (Davidson et al., 2008, p. 1221) the day we provided care, having had a cesarean section the day before. The first assessment was performed at 0800. Vital signs were as follows: temperature 37.0 Celsius, heart rate 100 per minute, respiratory rate 20 per minute, blood pressure 122/80, and pain 2/10, and student gave 2 Percocet at 1000, after having her last dose at 0600. Patient had a 20 gauge heparin-locked intravenous line in her left hand, which was to be discontinued later that day. Patient is breastfeeding, and breasts were soft and tender, with no cracking or bleeding noted on the nipples. Fundal height was -1 in relation to the umbilicus, and was firm and midline. The fundus is “the top portion of the uterus” and should be located in the middle of the abdomen, “one half to two thirds of the way between the symphysis pubis and the umbilicus,” (Davidson et al., 2008, p. 1041). For the first 6 to 12 hours after birth, “the fundus of the uterus rises to the level of the umbilicus because of blood and clots that remain within the uterus and changes in support of the uterus by the ligaments,” Davidson et al., 2008, p. 1041. If the fundus is not firm and rises above the umbilicus, the uterus may be bleeding greatly. Bowel sounds were present in all four quadrants. The abdomen was soft and non-tender, with no distention present. The patient was on a normal diet, and had a good appetite. Her last bowel movement (LBM) was on February 13. Her surgical incision was well approximated with no redness, edema, bruising (ecchymosis), or drainage, and is secured with steri strips; the patient also had an abdominal binder on. Patient had a Foley catheter that was discontinued at 0530 that morning. Patient had

been up with assistance and voided before our arrival to the floor. She is voiding an adequate amount of clear, yellow urine. She voided 600cc in the hat as measured at 1500. Patient had a moderate amount of lochia rubra, and the perineal pad was changed. Lochia rubra is “red, blood-tinged vaginal discharge that occurs following birth and lasts 2-4 days,” (Davidson et al., 2008, p. 1218). There were no clots noted by the student or by the patient. The patient had no perineal lacerations which are wounds or irregular tears of the flesh which can happen to the cervix or perineum during childbirth. There was no pain, warmth, redness, or swelling noted in the lower extremities. Patient was wearing her own Ted hose and sequential compression devices (SCDs) while in bed. The patient did have some mild pedal swelling bilaterally. All peripheral pulses were +2 bilaterally. M.W.’s emotions were appropriate, but she showed some concern and/or frustration regarding breast feeding. She was calm, responded well to the infant’s needs, was willing to learn, and seemed to be bonding (“process of parent-infant attachment occurring at or soon after birth,” (Davidson et al., 2008, p. 1209)) well with the infant. Both the patient and her husband demonstrated enfacement with the baby (which involves the mother having “direct face-to-face and eye-to-eye contact” with the newborn, Davidson et al., 2008, p. 1049) and talked to the baby. M.W. was alert and oriented to person, place, time, and situation. Cardiovascular assessment revealed normal apical rate and rhythm. Capillary refill was less than 3 seconds in all extremities. Mild pedal edema was graded at +1 and was non-pitting. Assessment of the skin reveals warm and of normal color. The Braden score was assessed that morning by the nurse, and was scored at a 23/23. Respiratory assessment showed no signs of distress. Breath sounds were clear and equal in all lobes, and respiratory rate was even, unlabored, and within normal limits. Patient denied cough and shortness of breath. She was using an incentive spirometer to prevent postoperative complications, such as pulmonary embolism.

Assessment at 1600 yielded the same results. Her vital signs remained stable and were as follows: temperature 36.4 Celsius, heart rate 100 per minute, respiratory rate 18 per minute, blood pressure 130/90, and pain was a 2/10, after which 2 Percocet were given to keep her pain level maintained.

Maternal Laboratory Data

A set of admission labs and postpartum labs were drawn. The values are presented in the table below.

Admission Labs

Test	Normal Values	Result	Interpretation
WBC	5,000-10,000/mm ³	9,440 mm ³	Normal
Hgb	12-16 g/dL	13.1 g/dL	Normal
Hct	38-47%	38.4	Normal
Platelet	150-450 x 10 ⁹ /L	142 x 10 ⁹ /L	Low (mild thrombocytopenia). Platelet count usually doesn't change much in pregnancy. This is likely due to a virus causing platelet destruction. The patient has HSV and

			Epstein Barr.
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Post-Partum Labs

Test	Normal Values	Result	Interpretation
WBC	5,000-10,000/mm ³	10,940 mm ³	High. This is likely due to nonpathologic leukocytosis, which often occurs during labor and in the immediate postpartal period.
Hgb	12-16 g/dL	11.1 g/dL	Low. This is likely due to anemia from blood loss during caesarian delivery.
Hct	38-47%	32.1%	Low. This is likely due to anemia from blood loss during caesarian delivery.
Platelet	150-450 x10 ⁹ /L	124 x10 ⁹ /L	Low. This is likely due to anemia from blood loss during

			caesarian delivery.
RBC	4.2-6.0 million/mm ³	3.44 million/mm ³	Low. This is likely due to anemia from blood loss during caesarian delivery.

*Normal Values from: *Laboratory and diagnostic tests with nursing implications* (7th ed).

Maternal Medications

M.W. was taking a number of medications; information about these medications is listed below.

Medication	Dose, Route	Mechanism of Action	Indications for Use	Possible Side Effects	Nursing Responsibilities	Citation
Docusate-senna (Senokot S)	1 tab PO QHS	Stool Softener	“Prevention of constipation in patients who should avoid straining”	“Throat irritation, mild cramps, rashes”	-“Assess for abdominal distention, presence of bowel sounds, and usual pattern of bowel function. -Assess color, consistency, and amount of stool produced. -Administer with a full glass of water or juice.”	(Deglin, Vallerand, & Sanoski, 2011, p. 466-467)
Ferrous sulfate (Feosol)	325 mg = 1 tab PO Q day (For Hmg 9-10 give 1 tab, for Hmg 8-9 give 2 tabs, Hmg <8 notify	“Resolution or prevention of iron deficiency anemia.”	“Treatment & prevention iron deficiency anemia”	“Most common: nausea, constipation, dark stools, epigastric pain”	- “Assess bowel function for constipation or diarrhea. Notify physician or other health care professional and use appropriate nursing measures should these	(Deglin, Vallerand, & Sanoski, 2011, p. 736-741)

	the physician)				occur.”	
Ketorolac (Toradol)	IV Push 2/14 – 1 dose of 30 mg=2 ml 2/14 – 3 dose of 15 mg = 1 ml q 8 hours	“Decrease pain.”	“Short-term management of pain”	“Most Common: Drowsiness anaphylaxis Life threatening: GI bleeding, exfoliative dermatitis, Stevens-Johnson syndrome, toxic epidermal necrolysis.”	-“ Patients who have asthma, aspirin-induced allergy, and nasal polyps are at increased risk for developing hypersensitivity reactions. Assess for rhinitis, asthma, and urticaria. - Assess pain (note type, location, and intensity) prior to and 1–2 hr following administration. - Administer over at least 15 sec”	(Deglin, Vallerand, & Sanoski, 2011, p. 756-758)
Levothyroxine (Synthroid)	PO Q day 75 mcg = 1 tablet	“Replacement in hypothyroidism to restore normal hormonal balance”	“Thyroid supplementation in hypothyroidism”	“Usually only seen when excessive doses cause iatrogenic hyperthyroidism”	-“ Assess apical pulse and blood pressure prior to and periodically during therapy. Assess for tachyarrhythmias and chest pain.”	(Deglin, Vallerand, & Sanoski, 2011, p. 1219-1222)
RhoGAM	IM 300 mcg = 2 ml	“Prevention of antibody response and hemolytic disease of the newborn in future pregnancies.”	Given to woman who is Rh – with a fetus that is Rh +	Most common: anemia	-“Monitor patient for signs and symptoms of intravascular hemolysis, anemia, and renal insufficiency . - Administer into the deltoid muscle. Dose should be given within 3 hours but may be given up to 72 hours after delivery, miscarriage, abortion, or transfusion.”	(Deglin, Vallerand, & Sanoski, 2011 p. 1105)
Acetaminophen (Tylenol)	650 mg = 2 tablets PO PRN Q6h for mild pain	“Analgesia, antipyretic”	“Mild pain, fever”	“Life threatening: hepatic failure, hepatotoxicity (overdose)”	-“Assess type, location, and intensity of pain before and 30-60 min after administration	(Deglin, Vallerand, & Sanoski, 2011, p. 112-

					-If overdose occurs Mucomyst (acetylcysteine) is the antidote.”	113).
Acetaminophen-Oxycodone (Percocet)	2 tablets PO Q4hr (1 tablet moderate) for severe pain	“Decreased pain”	“Moderate to severe pain”	“Most common: confusion, sedation, constipation. Life threatening: respiratory depression”	“-Assess type, location, and intensity of pain prior to and 1 hour after administration” -Assess blood pressure, pulse, and respirations periodically during administration -Prolonged use may lead to dependence -If respiratory depression occurs (<10/min), Narcan is the antidote.”	(Deglin, Vallerand, & Sanoski, 2011, p. 966-969)
Bisacodyl (Dulcolax)	10 mg rectal suppository Q day	“Evacuation of the colon”	“Treatment of constipation”	“Most common: abdominal cramps, nausea”	-“Assess pt for abdominal distention, presence of bowel sounds, and usual pattern of bowel function -Assess color, consistency, and amount of stool produced”	(Deglin, Vallerand, & Sanoski, 2011, p. 230-231)
Hydroxyzine (Vistaril)	IM 50 mg = 1 ml Q4hr PRN for nausea	“Decreased nausea and vomiting”	“Antiemetic”	“Most common: drowsiness, dry mouth, pain at IM site”	-“Assess pt for profound sedation and provide safety precautions -Assess degree of nausea and frequency and amount of emesis.	(Deglin, Vallerand, & Sanoski, 2011, p. 682-684)
Ibuprofen (Motrin)	600 mg = 1 tab PO Q6hr for mild pain	“Decreased pain and inflammation, reduction of fever”	“Mild to moderate pain, lowering of fever”	“Most common: headache, constipation, dyspepsia, nausea, vomiting Life threatening: GI bleeding,	-“Assess location, type, and intensity of pain prior to and 1-2 hours following administration -May cause	(Deglin, Vallerand, & Sanoski, 2011, p. 688-691)

				hepatitis, exfoliative dermatitis, stevens-johnson syndrome, toxic epidermal necrolysis, anaphylaxis	prolonged bleeding time”	
Simethicone (Gas-X)	80 mg = 1 tab TID PRN	“Causes the coalescence of gas bubbles”	“Relief of painful symptoms of excess gas in the GI tract that may occur post-operatively”	No significant side effects	-“Assess pt for abdominal pain, distention, and bowel sounds prior to and periodically during therapy. Frequency of belching and passage of flatus should also be assessed.”	(Deglin, Valleran d, & Sanoski, 2011, p. 1155)
Zolpidem (Ambien)	5 mg = 1 tab QHS PRN	“Sedation and induction of sleep”	“Insomnia”	“Most common: daytime drowsiness, dizziness Life threatening: anaphylactic reactions”	-“Prolonged use of >7-10 days may lead to physical and psychological dependence. - Assess pt for pain, medicate as needed. Untreated pain decreases sedative effect”	(Deglin, Valleran d, & Sanoski, 2011, p. 1313-1315)
Valacyclovir (Valtrex)	Dose not indicated in chart. Normal dose is 50mg-1g/day PO	“Inhibited viral replication, reduced time to healing of lesions.”	“Reduced transmission of genital herpes.”	“Most common: headache, nausea Life threatening: renal failure, thrombotic thrombocytopenic purpura, hemolytic uremic syndrome.”	“Assess lesions before and daily during therapy” Monitor for life-threatening side effects.	(Deglin, Valleran d, & Sanoski, 2011, p. 1259)

Newborn Assessment

The newborn is an 8 pound 3 ounce female, born on February 14, 2012 at 0725 and was 1 day old upon assessment. She is average for gestational age. She was born at 39 weeks and 4

days gestation. Her Apgar score was 9. The first assessment on the newborn was performed at 0800. Her vital signs were within normal limits, her temperature being 36.9 Celsius, apical heart rate of 128 per minute, and respiratory rate of 40 per minute. Her skin was pink and dry with stork bites noted over her face. There was no jaundice (which is “yellow pigmentation of body tissues caused by the presence of bile pigments,” (Davidson et al., 2008, p. 1217)) noted. Her mucous membranes were moist and pink. The Moro reflex, suck reflex, Babinski reflex, and rooting reflex were all assessed and present. The Moro reflex is “flexion of the newborn’s thighs and knees accompanied by fingers that fan, then clench, as the arms are simultaneously thrown out and then brought together as though embracing something; this reflex can be elicited by startling the newborn with a sudden noise or movement,” (Davidson et al., 2008, p. 1219). The sucking reflex is “normal newborn reflex elicited by inserting a finger or nipple in the newborn’s mouth, resulting in forceful, rhythmic sucking,” (Davidson et al., 2008, p. 1224). The Babinski reflex is a “reflex found normally in infants under 6 months of age in which the great toe dorsiflexes when the sole of the foot is stimulated,” (Davidson et al., 2008, p. 1209). The rooting reflex is “an infant’s tendency to turn the head and open the lips to suck when one side of the mouth or cheek is touched,” (Davidson et al., 2008, p. 1223). Her abdomen is soft with bowel sounds present in all four quadrants. She is voiding adequately and passed meconium (described as “dark green or black material present in the large intestine of a full-term infant; the first stools passed by the newborn,” Davidson et al., 2008, p. 1218), which was not seen by the student but indicated in the chart. M.W. reported that the baby had 4 stools and 2 wet diapers since the time of delivery. Her umbilical cord (which is “the structure connecting the placenta to the umbilicus of the fetus and through which nutrients from the woman are exchanged for wastes from the fetus,” Davidson et al., 2008, p. 1225) was present, clamped, and drying. The baby’s anterior and

posterior fontanelles (which are “in the fetus, an unossified space, or soft spot, consisting of a strong band of connective tissue lying between the cranial bones of the skull,” Davidson et al., 2008, p. 1215) were both soft, they were not bulging or sunken in. She had a vacuum delivery, and some left sided caput succedaneum was noted. The baby’s muscle tone was good, her extremities were symmetrical, pulses were all present and graded at +2. The baby’s cry was weak. Respiratory assessment revealed no signs of distress with no nasal flaring (which is “inspiratory dilation of nostrils” to attempt to compensate “to lessen the resistance of the narrow nasal passage,” Davidson et al., 2008, p. 991) or retractions (“inward pulling of soft parts of the chest cage – suprasternal, substernal, intercostal, subcostal – at inspiration” to “reflect the significant increase in negative intrathoracic pressure necessary to inflate stiff, noncompliant lungs,” Davidson et al., 2008, p. 991) noted. Her lung sounds were clear to auscultation (CTA) and were even in all lobes. Respiratory rate was within normal limits. Cardiovascular assessment indicated a regular rhythm. Apical rate was auscultated for a full minute, and rate was within normal limits. No abnormal heart sounds were noted. Capillary refill was less than 3 seconds in all extremities. The NIPS pain scale was performed, and indicated that the baby was not in pain. The baby is feeding adequately every 2-3 hours. The mother is having some difficulty with breast feeding, so the baby is also being supplemented with formula. The student called for a lactation (which is “the process of producing and supplying breast milk,” Davidson et al., 2008, p. 1217) consult to assist the patient with her next feeding.

A second assessment was performed at 1600. Her vital signs remained stable and were as follows: temperature 36.8 Celsius, heart rate 140 per minute, respiratory rate 42 per minute, and pain rated at 0/10 using the NIPS scale. The remainder of the assessment remained unchanged from the 0800 assessment.

There were no newborn laboratory results present in the chart, and they were being drawn as we were leaving the unit.

Nursing Care Planning

<p>Nursing Diagnosis #1- Imbalanced nutrition: less than body requirements related to: limited intake during the first day of life AEB 7% weight loss since birth, insufficient intake of calories, maternal insecurity with breastfeeding (<i>Infant</i>)</p>	<p>Nursing Diagnosis #2- Acute pain related to: tissue trauma secondary to surgery AEB pain rating of 2/10, day 1 postoperative, patient expressed discomfort upon rising (<i>Maternal</i>)</p>	<p>Nursing Diagnosis #3- Risk for infection related to: site for invasion of microorganisms secondary to surgical incision site (<i>Maternal</i>)</p>	<p>Nursing Diagnosis #4- Ineffective breast feeding related to: Maternal anxiety and insecurity AEB infant's 7% weight decrease, insufficient feedings, frequent request of lactation consult (<i>Maternal</i>)</p>
<p>Goals:</p> <p>STG- The infant will demonstrate effective eating patterns, improved nutritional status, and weight gain by discharge.</p> <p>LTG- The infant will regain all weight lost by 5 days old.</p>	<p>Goals:</p> <p>STG- The patient will rate pain as less than 2 on a scale of 1-10 within one hour after administration of pain medication.</p> <p>LTG- The patient will describe and/or demonstrate non-pharmacological methods of pain relief upon discharge.</p>	<p>Goals:</p> <p>STG- The patient's vital signs will remain stable and surgical incision will remain free of signs and symptoms of infection during shift.</p> <p>LTG- The patient will remain free of infection during the hospital stay.</p>	<p>Goals:</p> <p>STG- The patient will report an increased level of confidence with breastfeeding by end of shift.</p> <p>LTG- The patient will continue to breast feed effectively and demonstrate effective breast feeding patterns by discharge.</p>
<p>Interventions:</p> <p>1. Weigh the infant daily and compare to previous weights.</p> <p>2. Monitor intake and output throughout shift.</p>	<p>Interventions:</p> <p>1. Assess the patient's pain using a scale of 1 to 10, assessing the location and character of the pain every 2 hours.</p> <p>2. Observe patient for</p>	<p>Interventions:</p> <p>1. Monitor vital signs every 4 hours, and note if pulse is more than 100 consistently or if temperature is more than 100.4F.</p> <p>2. Teach the client to</p>	<p>Interventions:</p> <p>1. Provide for privacy and a calm, relaxed atmosphere at all times during hospitalization.</p> <p>2. Assist the client to get herself and the</p>

<p>3. Assess breast feeding mother while nursing and instruct her to burp the baby afterward, every time the mother attempts breastfeeding for the first 24-48 hours.</p> <p>4. Refer to lactation specialist as needed.</p> <p>5. Praise parents for successful feedings with each contact with the patient.</p>	<p>nonverbal signs of discomfort, such as grimacing, guarding, pallor and withdrawal with every contact with the patient.</p> <p>3. Administer appropriate pain medications as ordered, and assess for pain relief after administration.</p> <p>4. Teach client nonpharmacologic pain relief measures, such as splinting her incision with an abdominal binder at least once per shift or as often as tolerated.</p> <p>5. Encourage the patient to plan frequent rest periods during the first few weeks post-partum.</p>	<p>perform perineal care and to change pads after each elimination.</p> <p>3. Encourage patient to void every 2 hours with each contact with the patient.</p> <p>4. Wash hands before and after care, and use gloves when indicated.</p> <p>5. Monitor incision and note redness, edema, ecchymosis, approximation, and drainage at least 2 times per shift.</p> <p>6. Observe the color, odor and consistency of lochia at least 2 times per shift.</p>	<p>infant into a comfortable position for nursing with the baby's body flat against hers.</p> <p>3. Show client how to hold her fingers in a "C" around the breast while nursing to ensure the infant's nose remains uncovered.</p> <p>4. Encourage client to stimulate the rooting reflex and help the infant latch on while her mouth is open.</p> <p>5. Praise client for skill development and nurturing behaviors, and reinforce that breast-feeding is a natural process as often as tolerated.</p> <p>6. Teach the patient to breast feed every 2-3 hours.</p>
<p>Rationales:</p> <p>1. Weighing infants every day is indicative of growth and overall nutritional status.</p> <p>2. Monitoring I&O gives information about nutritional status and fluid balance.</p> <p>3. Assisting the</p>	<p>Rationales:</p> <p>1. Pain should be rated to determine its severity, location, aggravating and relieving factors, and the quality of the pain to decide how to best treat the pain.</p> <p>2. Even if the patient does not verbalize her pain, it is important to</p>	<p>Rationales:</p> <p>1. Vital signs are a good indicator of present condition, and may be used to detect complications, such as the onset of infection. Any drastic change in vital signs should be reported.</p> <p>2. It is important to keep the perineal area</p>	<p>Rationales:</p> <p>1. In order for the baby to feed effectively, it is important that the mother feels calm and relaxed in order for her to learn effectively. In addition, infants also respond to their mother's emotional state, and the infant</p>

<p>patient with positioning helps her to feed the infant correctly, and burping the baby decreases discomfort and regurgitation.</p> <p>4. The lactation consultant can assist the mother, who is having difficulty feeding, and can show her how to properly feed her infant, which will promote an increased level of nutrition and growth.</p> <p>5. The patient was feeling very discouraged and anxious about breast feeding, although she had a desire to do so. Praising and reassuring the mother increases her level of confidence and promotes a sense of accomplishment.</p>	<p>determine non-verbal cues to determine the severity.</p> <p>3. Patient was ordered Toradaol q8h for 3 doses and Percocet q4h prn for relief of her pain. NSAIDs and opioid analgesics are prescribed for pain management.</p> <p>4. Teaching the patient non-pharmacologic ways to relieve pain can increase her level of comfort without the use of medication.</p> <p>5. Exhaustion and fatigue can lead to altered perceptions of pain and distress.</p>	<p>clean and dry to prevent the growth of microorganisms.</p> <p>3. Encouraging the patient to urinate every 2 hours prevents urinary stasis, which can lead to further problems such as a urinary tract or bladder infection.</p> <p>4. Aseptic technique is the first line of protection against infection, and it important to maintain good hand hygiene while caring for patients to prevent further complications.</p> <p>5. A cesarean section is major surgery, and therefore, her risk of developing an infection is increased. It is important to continuously monitor the surgical site, observe for any abnormalities so they can be promptly treated.</p> <p>6. If the lochia is foul smelling or purulent, it can indicate an infection.</p>	<p>needs to remain relaxed to nurse correctly as well.</p> <p>2. Positioning her correctly allows her to remain comfortable and decrease feelings of fatigue, as well as promotes correct latching of the infant.</p> <p>3. Since infants are primarily nose-breathers, in order for the infant to feed adequately, it is important for the nares to remain unobstructed.</p> <p>4. When the rooting reflex is stimulated, the baby will move its mouth towards the nipple, promoting latching.</p> <p>5. The patient became discouraged while breast feeding. It is important to emphasize that this process, although natural, is new for her and takes time and practice. Praising her increases her level of confidence, which is important if she wants to breast feed.</p> <p>6. While the patient is producing colostrum now, promoting breast feeding every 2-3</p>
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			hours will help to stimulate mature milk production.
<p>Evaluation:</p> <p>After being assisted by the lactation specialist, she displayed an increased knowledge and ability to latch the baby to the breast and allow her to feed effectively.</p>	<p>Evaluation:</p> <p>The patient reported a consistent pain level of 2/10 throughout the shift, and per her request, was administered Percocet every four hours for her pain. She was also administered her last dose of Toradol during the shift. Patient was able to control pain through pharmacologic and relaxation techniques to ambulate and care for her infant effectively.</p>	<p>Evaluation:</p> <p>The patient exhibited no signs or symptoms of infection throughout the shift. Her vital signs remained stable, surgical incision was intact with no swelling, redness, drainage, and was well approximated. IV site remained clean, dry and intact until it was discontinued.</p>	<p>Evaluation:</p> <p>The patient verbalized an increased level of confidence in her ability to breast feed her infant by the end of the shift.</p>

In our consideration of M.W., we did not address some of her past surgical history in great detail. We did not address the neonate’s laboratory results because they were not yet available in the chart. We also did not extensively discuss the medications that her neonate received including vitamin K, erythromycin, Hepatitis B, etc. While there were no complications during delivery and only minor problems post-partum, considering M.W.’s obstetric history of herpes simplex virus, infertility, Epstein Barr Virus, and advanced maternal age, the risk that she could exhibit some severe complications was high. In regards to future care, while she had no active infection, herpes simplex virus poses a threat not only to M.W., but to her husband and any future children they may have, which elicits a great deal of concern. This case study allowed

for extensive assessment of both the mother and the newborn. This study allowed for further study into many obstetric problems, some more common than others, and that knowledge can be applied in providing competent care for future clients.

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