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| **Maryland Next Gen NCLEX Test Bank Project**  **September 1, 2022** | | | |
| **Case Study Topic**:  (& Stand-alone bow-tie) | Ectopic Pregnancy | **Author:** | Deborah Miller RNC, MSN, CNE, C-EFM  Community College of Baltimore County |

**Case Summary**

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| 21-year-old female with a history of inflammatory bowel disease presents to the emergency department with severe abdominal pain and light vaginal spotting beginning two hours ago. The client receives the diagnosis of ectopic pregnancy. The learner must recognize symptoms of a potential life-threatening emergency, decide what interventions to include in the plan of care, which to do first, and determine what client findings would indicate interventions have been effective. |

**Objectives**

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| 1. Regognize changes/trends in the client’s condition/ vital signs and interventions as needed  2. Provide care for clients experiencing complications of pregnancy/labor and or delivery  3. Provide preoperative care |

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| **Case Study Link** | **Case Study QR Code** |
| <https://umaryland.az1.qualtrics.com/jfe/form/SV_1OnVNFDIaCXiEjc> |  |
| **Bow-tie QR Code** | **Bow-tie Link** |
|  | <https://umaryland.az1.qualtrics.com/jfe/form/SV_9nO2vEaNYyyWg1o> |

**Case References**

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| Ricci, S.S, Kyle, T. & Carmen, S. (2021) *Maternity & Pediatric Nursing* (4th ed) Philadelphia, Wolters Kluwer |

**Case Study Question 1 of 6**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| **Nurses’ Notes** | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified. | | | | |
| **Vital Signs** | |
| Time | 0100 | | 0115 |
| Temp | 99F-37.2C | |  |
| Pulse | 114 | | 115 |
| RR | 24 | | 24 |
| B/P | 96/64 | | 94/62 |
| Pulse oximeter | 96 on 21% | | 96 on 21% |
| Pain | 10 | | 10 |

Which 4 findings require immediate follow-up?

* Blood pressure\*
* Diarrhea
* Pain\*
* Nausea
* Headache
* Heart rate\*
* Urinary frequency
* Skin pale\*

**Scoring Rule: 0/1**

**Rationale:** The client’s vital signs are trending towards hypovolemic shock. The nurse should recognize the new symptoms of paler and diaphoretic.

**Case Study Question 2 of 6**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| --- | --- |
| **Nurses’ Notes** | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified. | | | | |
| **Vital Signs** | |
| Time | 0100 | | 0115 |
| Temp | 99F-37.2C | |  |
| Pulse | 114 | | 115 |
| RR | 24 | | 24 |
| B/P | 96/64 | | 94/62 |
| Pulse oximeter | 96 on 21% | | 96 on 21% |
| Pain | 10 | | 10 |

* For each client finding click to indicate if the finding is consistent with spontaneous abortion, appendicitis, ectopic pregnancy, or irritable bowel syndrome. Each finding may be consistent with more than one condition.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Factor/findings | Spontaneous abortion | Appendicitis | Ectopic Pregnancy | Irritable bowel syndrome |
| Abdominal pain | * \* | * \* | * \* | * \* |
| Vaginal bleeding | * \* |  | * \* |  |
| Hypotension |  | * \* | * \* |  |
| Diarrhea |  |  |  | * \* |
| Amenorrhea | * \* |  | * \* |  |

**Each column must have at least one option selected**

**Scoring Rule: +/-**

**Rationale:** Amenorrhea, abdominal pain and vaginal bleeding are the classical clinical triad of symptoms for an ectopic pregnancy. Spontaneous abortion cramping, bleeding, should not produce hypotension unless there is excessive bleeding. Appendicitis would not produce vaginal bleeding. Irritable bowel syndrome has abdominal pain, but no vaginal bleeding.

**Case Study Question 3 of 6**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| **Nurses’ Notes** | | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified.  **0130:** IV started with 18-gauge catheter. Human chorionic gonadotropin and CBC labs sent. Pelvic exam performed by provider. Vaginal ultrasound preformed. Client extremely uncomfortable | | | | | | | |
| **Vital Signs** | | |
| Time | 0100 | | | | 0115 | 0130 |
| Temp | 99F-37.2C | | | |  |  |
| Pulse | 114 | | | | 115 | 118 |
| RR | 24 | | | | 24 | 26 |
| B/P | 96/64 | | | | 94/62 | 90/60 |
| Pulse oximeter | 96 on 21% | | | | 96 on 21% | 94 on 21% |
| Pain | 10 | | | | 10 | 10 |
| **Laboratory Report** | | |
| Lab | | | | Results | | Reference range | |
| Hematocrit | | | | 30% | | Males: 42-52%;Females: 32-42% | |
| Hemoglobin | | | | 10 g/dl | | Males: 13-18 g/dL; Females:11.5-14g/dL | |
| WBC | | | | 11,000 cells/mm3 | | 5 – 15,000 x 103 cells/mm3 | |
| Platelets | | | | 300,000/mm3 | | 135,000 to 350,000/ mm3 | |
| Beta human chorionic gonadotropin | | | | 5,000 mlu/ml | | Non-pregnant women: less than 5 mIU/mL | |
| **Diagnostic Reports** | |  | | | | | |
| Transvaginal ultrasound no products of conception in uterus. Evidence of active bleeding in the peritoneal cavity. | | | | | | | |

The nurse reviews the labs and diagnostic reports.

The nurse should recognize that the client is most likely experiencing

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| --- |
| Word Choices |
| Appendicitis |
| Ectopic pregnancy\* |
| Irritable bowel syndrome |
| Spontaneous abortion |

**Scoring Rule: 0/1**

**Rationale:** The beta human chorionic gonadotropin levels indicate the client is pregnant. Amenorrhea, abdominal pain and vaginal bleeding are the classical clinical triad of symptoms for an ectopic pregnancy. Spontaneous abortion cramping, bleeding, should not produce hypotension unless there is excessive bleeding. Appendicitis would not produce vaginal bleeding. Irritable bowel syndrome has abdominal pain, but no vaginal bleeding.

**Case Study Question 4 of 6**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| **Nurses’ Notes** | | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified.  **0130:** IV started with 18-gauge catheter. Human chorionic gonadotropin and CBC labs sent. Pelvic exam performed by provider. Vaginal ultrasound preformed. Client extremely uncomfortable  **0145**: An ectopic pregnancy diagnosed. The provider obtained informed consent for emergency surgery. Client NPO, Remains in severe pain. Abdominal distention noted, vaginal bleed increasing. Operating team notified. | | | | | | | |
| **Vital Signs** | | |
| Time | 0100 | | | | 0115 | 0130 | 0145 |
| Temp | 99F-37.2C | | | |  |  |  |
| Pulse | 114 | | | | 115 | 118 | 120 |
| RR | 24 | | | | 24 | 26 | 26 |
| B/P | 96/64 | | | | 94/62 | 90/60 | 90/58 |
| Pulse oximeter | 96 on 21% | | | | 96 on 21% | 94 on 21% | 94 on 21% |
| Pain | 10 | | | | 10 | 10 | 10 |
| **Laboratory Report** | | |
| Lab | | | | Results | | Reference range | |
| Hematocrit | | | | 30% | | Males: 42-52%;Females: 32-42% | |
| Hemoglobin | | | | 10 g/dl | | Males: 13-18 g/dL; Females:11.5-14g/dL | |
| WBC | | | | 11,000 cells/mm3 | | 5 – 15,000 x 103 cells/mm3 | |
| Platelets | | | | 300,000/mm3 | | 135,000 to 350,000/ mm3 | |
| Beta human chorionic gonadotropin | | | | 5,000 mlu/ml | | Non-pregnant women: less than 5 mIU/mL | |
| **Diagnostic Reports** | |  | | | | | |
| Transvaginal ultrasound no products of conception in uterus. Evidence of active bleeding in the peritoneal cavity. | | | | | | | |

The nurse prepares the client for surgery for a ruptured ectopic pregnancy.

* For each potential intervention click to specify if the intervention is indicated or not indicated to include in the plan of care.

|  |  |  |
| --- | --- | --- |
| Potential Intervention | Indicated | Not indicated |
| Bowel prep |  | * \* |
| Foley catheter | * \* |  |
| IV antibiotic | * \* |  |
| IV fluid bolus | * \* |  |
| Incentive spirometer |  | * \* |
| Obtain blood cultures |  | * \* |
| Obtain type and cross match | * \* |  |
| Shave pubic hair |  | * \* |
| Oxygen to keep pulse oximeter >94% | * \* |  |
| IV pain medication | * \* |  |

**Scoring Rule: 0/1**

**Rationale:** The nurse should address the client’s pain needs once the diagnosis made. Prepping the client for surgery could include an IV fluids bolus, foley catheter, and prophylactic antibiotic. The nurse should provide oxygen if the client’s pulse oximeter readings decrease. No, bowel prep is indicated and it may delay time to the surgical suite. Blood cultures are not appropriate there is no evidence of infection. Pubic hair removal is not the standard of care. Shaving can increase infection risk. Incentive spirometer is post- operative management.

**Case Study Question 5 of 6**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| **Nurses’ Notes** | | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified.  **0130:** IV started with 18-gauge catheter. Human chorionic gonadotropin and CBC labs sent. Pelvic exam performed by provider. Vaginal ultrasound preformed. Client extremely uncomfortable  **0145**: An ectopic pregnancy diagnosed. The provider obtained informed consent for emergency surgery. Client NPO, Remains in severe pain. Abdominal distention noted, vaginal bleed increasing. Operating team notified. | | | | | | | |
| **Vital Signs** | | |
| Time | 0100 | | | | 0115 | 0130 | 0145 |
| Temp | 99F-37.2C | | | |  |  |  |
| Pulse | 114 | | | | 115 | 118 | 120 |
| RR | 24 | | | | 24 | 26 | 26 |
| B/P | 96/64 | | | | 94/62 | 90/60 | 90/58 |
| Pulse oximeter | 96 on 21% | | | | 96 on 21% | 94 on 21% | 94 on 21% |
| Pain | 10 | | | | 10 | 10 | 10 |
| **Laboratory Report** | | |
| Lab | | | | Results | | Reference range | |
| Hematocrit | | | | 30% | | Males: 42-52%;Females: 32-42% | |
| Hemoglobin | | | | 10 g/dl | | Males: 13-18 g/dL; Females:11.5-14g/dL | |
| WBC | | | | 11,000 cells/mm3 | | 5 – 15,000 x 103 cells/mm3 | |
| Platelets | | | | 300,000/mm3 | | 135,000 to 350,000/ mm3 | |
| Beta human chorionic gonadotropin | | | | 5,000 mlu/ml | | Non-pregnant women: less than 5 mIU/mL | |
| **Diagnostic Reports** | |  | | | | | |
| Transvaginal ultrasound no products of conception in uterus. Evidence of active bleeding in the peritoneal cavity. | | | | | | | |

The nurse prepares the client for surgery.

Which 3 interventions should the nurse implement immediately?

* Foley catheter
* Antibiotic
* Fluid bolus \*
* Obtain type and cross match\*
* Administer oxygen
* IV pain medication\*

**Scoring Rule: 0/1**

**Rationale:** The client needs emergency surgery. Her immediate needs are to maintain perfusion. The client requires a fluid bolus and a type and cross match for blood. She also requires management of her severe pain. Oxygen orders are implemented if saturations drop. Antibiotics can be started at any time before surgery. A foley catheter can be inserted when the client is more comfortable and able to cooperate, or it can be inserted in the surgical suite.

**Case Study Question 6 of 6**

21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| --- | --- | --- |
| **Nurses’ Notes** | | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified.  **0130:** IV started with 18-gauge catheter. Human chorionic gonadotropin and CBC labs sent. Pelvic exam performed by provider. Vaginal ultrasound preformed. Client extremely uncomfortable  **0145**: An ectopic pregnancy diagnosed. The provider obtained informed consent for emergency surgery. Client NPO, Remains in severe pain. Abdominal distention noted, vaginal bleed increasing. Operating team notified.  **0200:** Type and cross match sent. Fluid bolus started. Medicated with morphine. | | | | | | | | | | |
| **Vital Signs** | | |
| Time | 0100 | | | | 0115 | 0130 | | 0145 | 2015 |
| Temp | 99F-37.2C | | | |  |  | |  |  |
| Pulse | 114 | | | | 115 | 118 | | 120 | 125 |
| RR | 24 | | | | 24 | 26 | | 26 | 25 |
| B/P | 96/64 | | | | 94/62 | 90/60 | | 90/58 | 88/58 |
| Pulse oximeter | 96 on 21% | | | | 96 on 21% | 94 on 21% | | 94 on 21% | 94 on 21% |
| Pain | 10 | | | | 10 | 10 | | 10 | 8 |
| **Laboratory Report** | | |
| Lab | | | | Results | | | Reference range | | | |
| Hematocrit | | | | 30% | | | Males: 42-52%;Females: 32-42% | | | |
| Hemoglobin | | | | 10 g/dl | | | Males: 13-18 g/dL; Females:11.5-14g/dL | | | |
| WBC | | | | 11,000 cells/mm3 | | | 5 – 15,000 x 103 cells/mm3 | | | |
| Platelets | | | | 300,000/mm3 | | | 135,000 to 350,000/ mm3 | | | |
| Beta human chorionic gonadotropin | | | | 5,000 mlu/ml | | | Non-pregnant women: less than 5 mIU/mL | | | |
| **Diagnostic Reports** | |  | | | | | | | | |
| Transvaginal ultrasound no products of conception in uterus. Evidence of active bleeding in the peritoneal cavity. | | | | | | | | | | |

The nurse prepares the client for surgery and rechecks the vital signs.

Complete the sentence from the list of drop-down options.

|  |  |
| --- | --- |
| The nurse determines the client’s status is | improving  deteriorating \*  unchanged |
| as evidenced by the | pain rating  heart rate\*  respirations |

**Scoring Rule: Rationale**

Rationale: Clients vital signs are trending towards hypovolemic shock as evidenced by the heart rate is trending upward, and the decreasing B/P and oxygenation saturation.

**Bowtie**

A 21-year-old female presents to the emergency department with severe abdominal pain symptoms and light vaginal bleeding.

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| --- | --- | --- |
| **Nurses’ Notes** | | |
| **0100**: Client arrived unaccompanied to the emergency room complaining of vaginal bleeding and severe abdominal pain. Reports headache, nausea, fatigue, breast tenderness, diarrhea, and urinary frequency. Client has a history of irritable bowel syndrome. Reports last menstrual period was 8 weeks ago. Denies pregnancy and states that she has an intrauterine device for birth control. States severe abdominal pain and light vaginal bleeding began approximately two hours ago. Took ibuprofen, but the pain kept increasing. Client is tearful. Small amount vaginal bleeding noted on client’ pad.  **0115**: Requesting pain medication for severe cramping. Vaginal bleeding remains light. Client diaphoretic and pale. Complaints of feeling lightheaded. Head of the bed lower. Provider notified.  **0130:** IV started with 18-gauge catheter. Human chorionic gonadotropin and CBC labs sent. Pelvic exam performed by provider. Vaginal ultrasound preformed. Client extremely uncomfortable | | | | | | | |
| **Vital Signs** | | |
| Time | 0100 | | | | 0115 | 0130 |
| Temp | 99F-37.2C | | | |  |  |
| Pulse | 114 | | | | 115 | 118 |
| RR | 24 | | | | 24 | 26 |
| B/P | 96/64 | | | | 94/62 | 90/60 |
| Pulse oximeter | 96 on 21% | | | | 96 on 21% | 94 on 21% |
| Pain | 10 | | | | 10 | 10 |
| **Laboratory Report** | | |
| Lab | | | | Results | | Reference range | |
| Hematocrit | | | | 30% | | Males: 42-52%;Females: 32-42% | |
| Hemoglobin | | | | 10 g/dl | | Males: 13-18 g/dL; Females:11.5-14g/dL | |
| WBC | | | | 11,000 cells/mm3 | | 5 – 15,000 x 103 cells/mm3 | |
| Platelets | | | | 300,000/mm3 | | 135,000 to 350,000/ mm3 | |
| Beta human chorionic gonadotropin | | | | 5,000 mlu/ml | | Non-pregnant women: less than 5 mIU/mL | |
| **Diagnostic Reports** | |  | | | | | |
| Transvaginal ultrasound no products of conception in uterus. Evidence of active bleeding in the peritoneal cavity. | | | | | | | |

Complete the diagram by dragging from the choices below to specify what condition the client is most likely experiencing, 2 actions the nurse should take to address that condition, and 2 parameters the nurse should monitor to assess the client’s progress.

|  |  |  |
| --- | --- | --- |
| Action to take |  | Parameter to monitor |
|  | Condition most likely experiencing |  |
| Action to take |  | Parameter to monitor |
|  |  |  |
| **Actions to take** | **Potential conditions** | **Parameters to monitor** |
| Prep for a dilation and curettage | Irritable bowel syndrome | Temperature |
| Administer fluid bolus \* | Spontaneous abortion | Urine |
| Administer methotrexate | Ectopic pregnancy \* | Blood pressure \* |
| Insert nasogastric tube | Appendicitis | Level of consciousness\* |
| Provide pre-operative teaching\* |  | Lung sounds |

**Scoring Rule: 0/1**

**Rationale:** The clients’ beta human chorionic gonadotropin levels suggest pregnancy. Amenorrhea, severe abdominal pain, and bleeding are the classic triad of an ectopic pregnancy. The diagnostic report shows the pregnancy has ruptured and the client will most likely need removal of the ruptured fallopian tube. Care will focus on preparing the client for surgery and maintain perfusion. Blood pressure and levels of consciousness should be monitored to prevent hypovolemic shock