

Birth Injury

Topic- based Uworld Questions

Block 1, 2, 7, 8



A 33-year-old woman, gravida 7 para 6, at 39 weeks gestation undergoes induction of labor for new-onset hypertension. The patient became pregnant 5 months after her most recent delivery; otherwise, this pregnancy had been uncomplicated. Her previous pregnancies ended in uncomplicated term vaginal deliveries. She has a history of several lower uterine segment fibroids. Blood pressure is 160/96 mm Hg. Prepregnancy weight was 115 kg (253.5 lb) and the patient gained 13.6 kg (30 lb) during the pregnancy. Fundal height is 43 cm. Twenty-two hours after labor induction and after 2 hours of pushing, the fetal head delivers and retracts into the maternal perineum. Gentle traction fails to deliver the anterior fetal shoulder. Which of the following is the greatest risk factor for this patient's clinical presentation?

- A. Gestational age
- B. Hypertension
- C. Maternal weight
- D. Short interpregnancy interval
- E. Uterine fibroids

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A 33-year-old woman, gravida 7 para 6, at 39 weeks gestation undergoes induction of labor for new-onset hypertension. The patient became pregnant 5 months after her most recent delivery; otherwise, this pregnancy had been uncomplicated. Her previous pregnancies ended in uncomplicated term vaginal deliveries. She has a history of several lower uterine segment fibroids. Blood pressure is 160/96 mm Hg. Prepregnancy weight was 115 kg (253.5 lb) and the patient gained 13.6 kg (30 lb) during the pregnancy. Fundal height is 43 cm. Twenty-two hours after labor induction and after 2 hours of pushing, the fetal head delivers and retracts into the maternal perineum. Gentle traction fails to deliver the anterior fetal shoulder. Which of the following is the greatest risk factor for this patient's clinical presentation?

- A. Gestational age (7%)
- B. Hypertension (4%)
- C. Maternal weight (61%)
- D. Short interpregnancy interval (8%)
- E. Uterine fibroids (18%)

Omitted

Correct answer
C61%
Answered correctly03 secs
Time Spent04/08/2020
Last Updated

Explanation

Shoulder dystocia

Shoulder dystocia	
Definition	<ul style="list-style-type: none"> • Failure of usual obstetric maneuvers to deliver fetal shoulders
Risk factors	<ul style="list-style-type: none"> • Fetal macrosomia • Maternal obesity • Excessive pregnancy weight gain • Gestational diabetes • Post-term pregnancy
Warning signs	<ul style="list-style-type: none"> • Protracted labor • Retraction of fetal head into the perineum after delivery (turtle sign)

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Shoulder dystocia is the **inability to deliver the fetal shoulders** with usual obstetric maneuvers after the fetal head delivers. It is an obstetric emergency due to risk for neonatal brachial plexus injury, clavicular and humeral fracture, and, if prolonged, hypoxic brain injury and death. The major risk factor for **shoulder dystocia** is **fetal macrosomia**, defined as an estimated fetal weight >4.5 kg (9.9 lb). Other risk factors are conditions that predispose to macrosomia, including post-term pregnancy (≥ 42 weeks gestation), maternal obesity, gestational diabetes mellitus, and excessive maternal weight gain during pregnancy.

Shoulder dystocia also frequently occurs in patients with no risk factors and can be difficult to predict. Warning signs of an impending dystocia include a **prolonged first or second stage** of labor and retraction of the fetal head into the perineum after delivery (eg, **turtle sign**).

(Choice A) Post-term pregnancy is a risk factor for shoulder dystocia due to an increased risk of fetal macrosomia. This patient is at term.

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Shoulder dystocia also frequently occurs in patients with no risk factors and can be difficult to predict. Warning signs of an impending dystocia include a **prolonged first or second stage** of labor and retraction of the fetal head into the perineum after delivery (eg, **turtle sign**).

(Choice A) Post-term pregnancy is a risk factor for shoulder dystocia due to an increased risk of fetal macrosomia. This patient is at term.

(Choices B and D) Hypertension and a short interpregnancy interval (eg, <18 months) are risk factors for fetal growth restriction rather than fetal macrosomia; consequently, they are not associated with shoulder dystocia.

(Choice E) Uterine fibroids are associated with an increased risk for miscarriage, malpresentation, and cesarean delivery. Fibroids do not affect fetal growth and, therefore, do not increase the risk of shoulder dystocia.

Educational objective:

Shoulder dystocia is the inability to deliver the fetal shoulders with usual obstetric maneuvers. Warning signs include a prolonged first or second stage of labor and retraction of the fetal head into the perineum after it delivers (eg, turtle sign). Maternal obesity, which predisposes to fetal macrosomia, is an important risk factor.

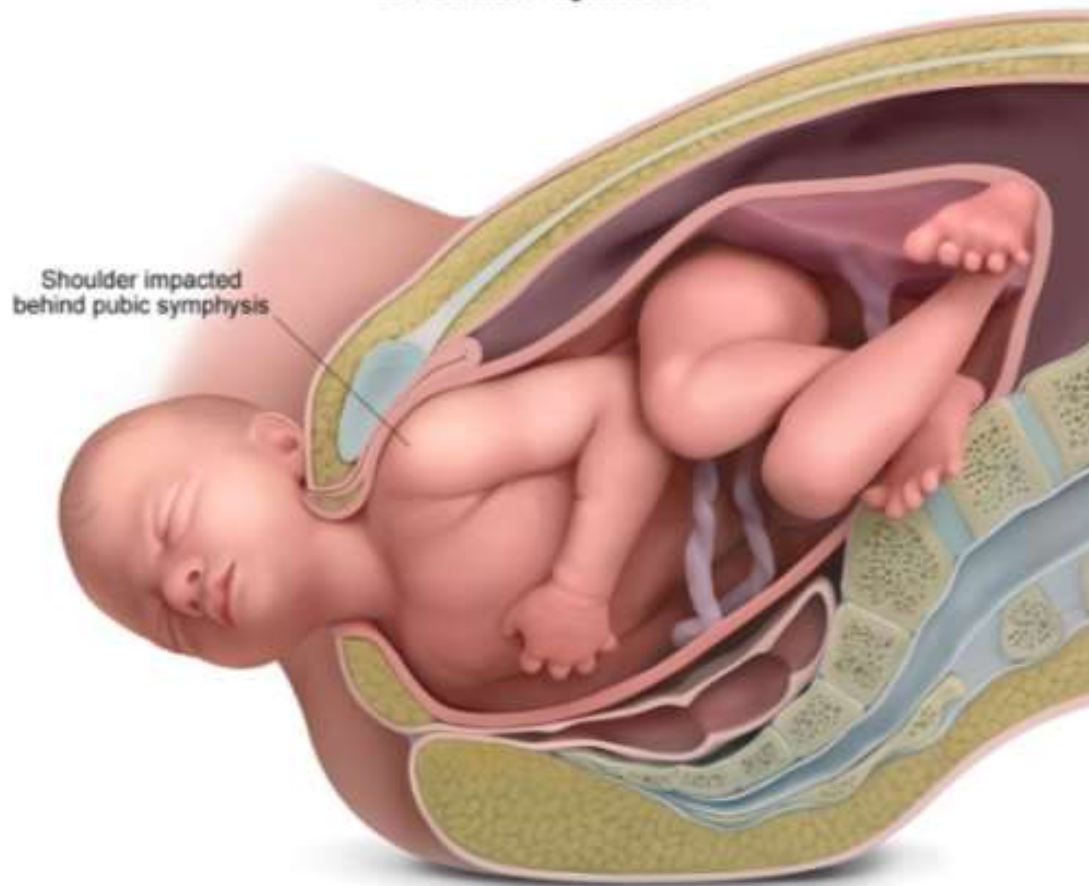
References

- [Shoulder dystocia: risk factors, predictability, and preventability.](#)

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Shoulder dystocia



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A 19-year-old woman, gravida 2 para 1, at 38 weeks gestation comes to the emergency department due to severe abdominal pain and vaginal bleeding. The patient had an ultrasound at 8 weeks gestation for vaginal spotting but has not otherwise received prenatal care this pregnancy. Her prior pregnancy two and a half years ago ended in a classical cesarean delivery at 24 weeks gestation for placental abruption. The patient smokes a pack of cigarettes daily and uses cocaine multiple times a week. Blood pressure is 90/60 mm Hg and pulse is 130/min. The abdomen is tender and has an irregular mass; no contractions are palpated. Bright red blood is noted on the perineal pad. Fetal heart tracing shows multiple prolonged decelerations to 100/min. Which of the following risk factors most likely contributed to this patient's presentation?

- A. First-trimester bleeding
- B. Illicit substance use
- C. Interpregnancy interval
- D. Maternal age
- E. Prior uterine surgery

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- A. First-trimester bleeding (0%)
- B. Illicit substance use (49%)
- C. Interpregnancy interval (0%)
- D. Maternal age (0%)
- E. Prior uterine surgery (49%)

Omitted

Correct answer
E

49%

Answered correctly



01 sec

Time Spent



06/17/2020

Last Updated

Explanation

Uterine rupture

- Prior uterine surgery (eg, cesarean delivery, myomectomy)

Uterine rupture	
Risk factors	<ul style="list-style-type: none"> • Prior uterine surgery (eg, cesarean delivery, myomectomy) • Induction of labor/prolonged labor • Congenital uterine anomalies • Fetal macrosomia
Clinical presentation	<ul style="list-style-type: none"> • Vaginal bleeding • Intraabdominal bleeding (hypotension, tachycardia) • Fetal heart decelerations • Loss of fetal station • Palpable fetal parts on abdominal examination • Loss of intrauterine pressure
Management	<ul style="list-style-type: none"> • Laparotomy for delivery & uterine repair

This patient's presentation is most consistent with **uterine rupture**, a full-thickness disruption of the uterine wall. **Uterine rupture** can present with severe, **sudden-onset abdominal pain** and vaginal bleeding; patients may have a **palpable, irregular abdominal mass** (ie, protruding fetal parts) and **fetal decelerations** due to fetal hypoxia and cord compression. Additional findings may include loss of fetal station and change in contraction pattern (eg, decreased uterine tone). Uterine rupture is an obstetric emergency because of the high risk of fetal demise and maternal hemorrhagic shock, as in this patient.

A significant **risk factor** for uterine rupture is **prior uterine surgery**, particularly a **prior classical cesarean delivery** because it creates a scar in the upper uterus (ie, near the fundus). The myometrium in the upper uterus is thick and contracts forcefully during labor. In patients with a prior classical cesarean delivery, the **inelastic scar** may not withstand increasing uterine distension or labor contractions, resulting in uterine rupture. Treatment of uterine rupture is with emergent laparotomy and cesarean delivery.

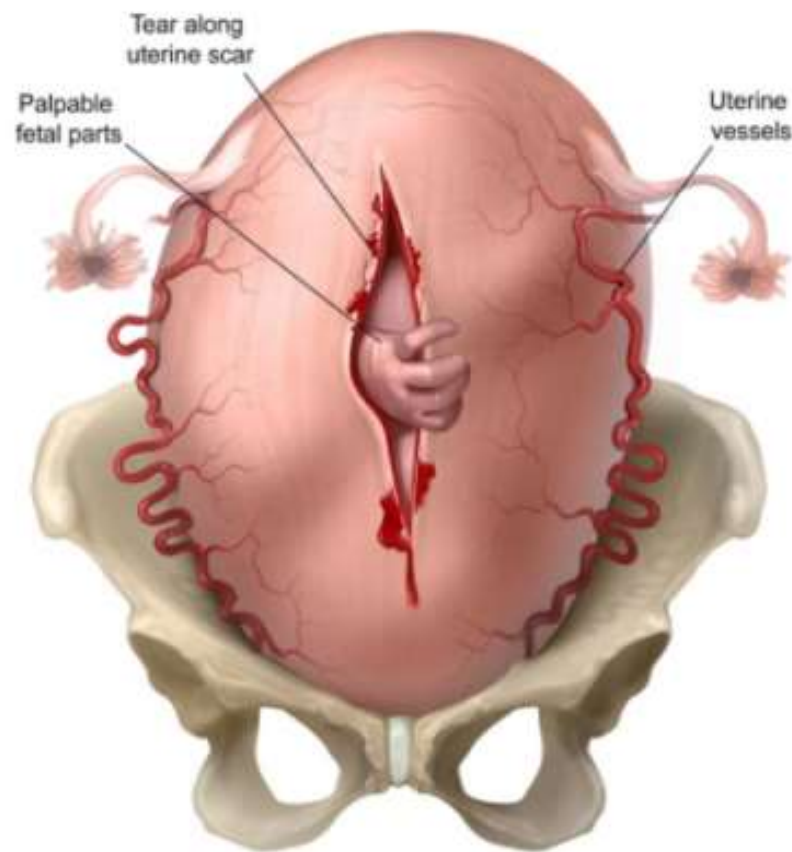
(Choice A) First-trimester bleeding can occur due to a **subchorionic hematoma**, in which the chorion partially detaches from the uterus due to

Management

- Laparotomy for delivery & uterine repair

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Uterine rupture



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Management

- Laparotomy for delivery & uterine repair

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Cesarean uterine incision types

Classical (vertical)

Higher risk of uterine rupture

**Low transverse (horizontal)**

Low risk for trial of labor after cesarean (TOLAC)



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Management

- Laparotomy for delivery & uterine repair

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Visible bleeding



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A 32-year-old woman, gravida 3 para 2, at 38 weeks gestation comes to the hospital due to contractions. The patient's prenatal course has been uncomplicated. She had a cesarean delivery for breech presentation at 39 weeks gestation in her second pregnancy. Blood pressure is 100/60 mm Hg, pulse is 100/min, and respirations are 22/min. Fetal heart rate tracing shows moderate variability, multiple accelerations, and no decelerations. Uterine contractions are regular and occur every 4 minutes. The cervix is 6 cm dilated and 60% effaced, and the fetal vertex is at 0 station. After 2 hours, the patient is suddenly restless and has intense lower abdominal pain. Fetal heart monitoring shows recurrent late decelerations. On pelvic examination, there is moderate vaginal bleeding, the cervix is 6 cm dilated and 60% effaced, and the fetal vertex is at -3 station. Which of the following is the most likely diagnosis in this patient?

- A. Abruptio placentae
- B. Fetal nuchal cord
- C. Normal labor
- D. Uterine rupture
- E. Vasa previa

Submit

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- A. Abruptio placentae (22%)
- B. Fetal nuchal cord (3%)
- C. Normal labor (1%)
- D. Uterine rupture (69%)
- E. Vasa previa (3%)

Omitted

Correct answer
D69%
Answered correctly02 secs
Time Spent05/04/2020
Last Updated

Explanation

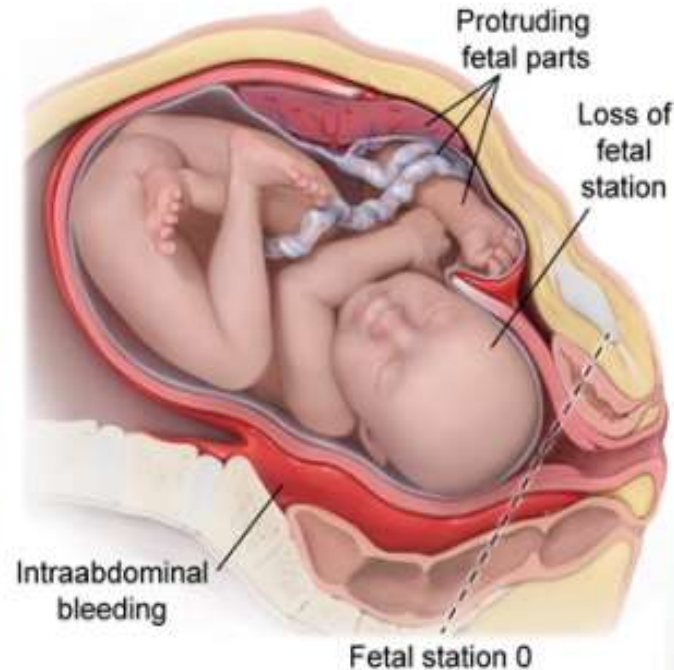
Uterine rupture

Uterine rupture

Before rupture



After rupture



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This patient with restlessness and intense, sudden-onset lower abdominal pain most likely has **uterine rupture**, a disruption of the uterine wall typically associated with contractions. Uterine rupture usually occurs in patients with **prior uterine surgery** (eg, cesarean delivery, myomectomy) because weakened uterine scar tissue can separate with the force of contractions. Patients can develop massive **bleeding** (ie, intraabdominal, vaginal) due to the highly vascular pregnant uterus.

When the uterus ruptures, the sudden decrease in intrauterine pressure and partial fetal delivery into the maternal abdomen can result in **loss of fetal station** (eg, 0 to -3 station). Fetal parts may also become palpable abdominally (ie, an irregular protuberance). Patients typically develop



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When the uterus ruptures, the sudden decrease in intrauterine pressure and partial fetal delivery into the maternal abdomen can result in **loss of fetal station** (eg, 0 to -3 station). Fetal parts may also become palpable abdominally (ie, an irregular protuberance). Patients typically develop an **abnormal fetal heart rate tracing**, including recurrent variable and late decelerations caused by umbilical cord compression and reduced uteroplacental blood flow, respectively. To prevent further maternal and fetal compromise, management includes emergency laparotomy and cesarean delivery.

(Choice A) **Abruptio placentae**, the premature separation of the placenta from the uterus, can present with vaginal bleeding, abdominal pain, and an abnormal fetal heart rate tracing. However, it is not associated with loss of fetal station.

(Choice B) A fetal nuchal cord, a loop of umbilical cord around the fetal neck, is a common incidental finding that may cause cord compression (eg, recurrent variable decelerations) during labor. However, it does not cause abdominal pain, vaginal bleeding, or late decelerations.

(Choice C) Normal labor typically presents with painful contractions and light vaginal bleeding from cervical dilation. However, in normal labor, the presenting fetal part descends (eg, 0 to +2 station) with advancing dilation.

(Choice E) **Vasa previa**, or fetal vessels overlying the cervix, is prone to tearing and can cause vaginal bleeding with an abnormal fetal heart rate tracing due to fetal blood loss. However, there is no associated abdominal pain or loss of fetal station, making this diagnosis unlikely.

Educational objective:

Patients with prior uterine surgery (eg, cesarean delivery) are at increased risk for uterine rupture, a disruption of the uterine wall typically associated with contractions. Uterine rupture may present with intense abdominal pain, vaginal bleeding, fetal heart rate tracing abnormalities, and loss of fetal station.

References

- ACOG practice bulletin no. 205: vaginal birth after cesarean delivery.

When the uterus ruptures, the sudden decrease in intrauterine pressure and partial fetal delivery into the maternal abdomen can result in **loss of**

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Visible bleeding



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When the uterus ruptures, the sudden decrease in intrauterine pressure and partial fetal delivery into the maternal abdomen can result in **loss of**

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Normal anatomy



Placenta

Vasa previa

Fetal vessels within
Wharton jellyUnprotected vessels
at internal os

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