LESSON ASSIGNMENT

LESSON 10

Fetal Positions and Adaptations.

TEXT ASSIGNMENT

Paragraphs 10-1 through 10-4.

LESSON OBJECTIVES

After completing this lesson, you should be able to:

10-1. Identify key terms and definitions that are related to fetal positions.

10-2. Identify the two types of "lie" positions of an infant.

10-3. Identify the three types of fetal presentations.

10-4. Identify the four types of attitudes seen during the birth process.

10-5. Identify descriptive statements referring to the station of the fetus during labor.

10-6. Identify descriptive statements, which refer to the specific points and positions of the fetus during labor and delivery.

10-7. Identify the different types of breech presentations.

10-8. Identify descriptive statements referring to the mechanism of labor.

SUGGESTION

After studying the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.
LESSON 10
FETAL POSITIONS AND ADAPTATIONS

10-1. GENERAL

The nursing care you may administer to the laboring patient is included in this lesson by presenting key factors in the relationship of the fetus to the obstetric passageway. You may not actually determine this information, however, it is vital that you have a basic understanding of what the nurse or physician identifies. This information will influence the length of labor, preparations for the delivery room, and the type of complications that may occur.

10-2. KEY TERMS RELATED TO FETAL POSITIONS

a. "Lie" of an Infant. Lie refers to the position of the spinal column of the fetus in relation to the spinal column of the mother. There are two types of lie, longitudinal and transverse. Longitudinal indicates that the baby is lying lengthwise in the uterus, with its head or buttocks down. Transverse indicates that the baby is lying crosswise in the uterus.

b. Presentation/Presenting Part. Presentation refers to that part of the fetus that is coming through (or attempting to come through) the pelvis first.

(1) Types of presentations (see figure 10-1). The vertex or cephalic (head), breech, and shoulder are the three types of presentations. In vertex or cephalic, the head comes down first. In breech, the feet or buttocks comes down first, and last--in shoulder, the arm or shoulder comes down first. This is usually referred to as a transverse lie.

![Figure 10-1. Typical types of presentations.](image)
(2) Percentages of presentations.

(a) Head first is the most common-96 percent.

(b) Breech is the next most common-3.5 percent.

(c) Shoulder or arm is the least common-5 percent.

(3) Specific presentation may be evaluated by several ways.

(a) Abdominal palpation-this is not always accurate.

(b) Vaginal exam--this may give a good indication but not infallible.

(c) Ultrasound--this confirms assumptions made by previous methods.

(d) X-ray--this confirms the presentation, but is used only as a last resort due to possible harm to the fetus as a result of exposure to radiation.

c. **Attitude.** This is the degree of flexion of the fetus body parts (body, head, and extremities) to each other. **Flexion** is resistance to the descent of the fetus down the birth canal, which causes the head to flex or bend so that the chin approaches the chest.

(1) Types of attitude (see figure 10-2).

A--Complete flexion. B--Moderate flexion. C--Poor flexion. D--Hyperextension

Figure 10-2. Types of attitudes.
(a) Complete flexion. This is normal attitude in cephalic presentation. With cephalic, there is complete flexion at the head when the fetus "chin is on his chest." This allows the smallest cephalic diameter to enter the pelvis, which gives the fewest mechanical problems with descent and delivery.

(b) Moderate flexion or military attitude. In cephalic presentation, the fetus head is only partially flexed or not flexed. It gives the appearance of a military person at attention. A larger diameter of the head would be coming through the passageway.

(c) Poor flexion or marked extension. In reference to the fetus head, it is extended or bent backwards. This would be called a brow presentation. It is difficult to deliver because the widest diameter of the head enters the pelvis first. This type of cephalic presentation may require a C/Section if the attitude cannot be changed.

(d) Hyperextended. In reference to the cephalic position, the fetus head is extended all the way back. This allows a face or chin to present first in the pelvis. If there is adequate room in the pelvis, the fetus may be delivered vaginally.

(2) Areas to look at for flexion.

(a) Head-discussed in previous paragraph, 10-2c(1).

(b) Thighs-flexed on the abdomen.

(c) Knees-flexed at the knee joints.

(d) Arches of the feet-rested on the anterior surface of the legs.

(e) Arms-crossed over the thorax.

(3) Attitude of general flexion. This is when all of the above areas are flexed appropriately as described.

d. Station. This refers to the depth that the presenting part has descended into the pelvis in relation to the ischial spines of the mother's pelvis. Measurement of the station is as follows:

(1) The degree of advancement of the presenting part through the pelvis is measured in centimeters.

(2) The ischial spines is the dividing line between plus and minus stations.

(3) Above the ischial spines is referred to as -1 to -5, the numbers going higher as the presenting part gets higher in the pelvis (see figure 10-3).
(4) The ischial spines is zero (0) station.

(5) Below the ischial spines is referred to +1 to +5, indicating the lower the presenting part advances.

![Figure 10-3. Measurement of station.](image)

**e. Engagement.** This refers to the entrance of the presenting part of the fetus into the true pelvis or the largest diameter of the presenting part into the true pelvis. In relation to the head, the fetus is said to be engaged when it reaches the midpelvis or at a zero (0) station. Once the fetus is engaged, it (fetus) does not go back up. Prior to engagement occurring, the fetus is said to be "floating" or ballottable.

**f. Position.** This is the relationship between a predetermined point of reference or direction on the presenting part of the fetus to the pelvis of the mother.

1. **The maternal pelvis is divided into quadrants.**
   
   a. Right and left side, viewed as the mother would.
   
   b. Anterior and posterior. This is a line cutting the pelvis in the middle from side to side. The top half is anterior and the bottom half is posterior.
   
   c. The quadrants never change, but sometimes it is confusing because the student or physician's viewpoint changes.

**NOTE:** Remember that when you are describing the quadrants, view them as the mother would.
(2) **Specific points on the fetus.**

(a) Cephalic or head presentation.

1  Occiput (O). This refers to the Y sutures on the top of the head.

2  Brow or fronto (F). This refers to the diamond sutures or anterior fontanel on the head.

3  Face or chin presentation (M). This refers to the mentum or chin.

(b) Breech or butt presentation.

1  Sacrum or coccyx (S). This is the point of reference.

2  Breech birth is associated with a higher perinatal mortality.

(c) Shoulder presentation.

1  This would be seen with a transverse lie.

2  Scapula (Sc) or its upper tip, the acromion (A) would be used for the point of reference.

(3) **Coding of positions.**

(a) Coding simplifies explaining the various positions.

1  The first letter of the code tells which side of the pelvis the fetus reference point is on (R for right, L for left).

2  The second letter tells what reference point on the fetus is being used (Occiput-O, Fronto-F, Mentum-M, Breech-S, Shoulder-Sc or A).

3  The last letter tells which half of the pelvis the reference point is in (anterior-A, posterior-P, transverse or in the middle-T).

(b) Each presenting part has the possibility of six positions. They are normally recognized for each position--using "occiput" as the reference point.

1  Left occiput anterior (LOA).

2  Left occiput posterior (LOP).

3  Left occiput transverse (LOT).
4 Right occiput anterior (ROA).

5. Right occiput posterior (ROP).

6 Right occiput transverse (ROT).

(c) A transverse position does not use a first letter and is not the same as a transverse lie or presentation.

1 Occiput at sacrum (O.S.) or occiput at posterior (O.P.).

2 Occiput at pubis (O.P.) or occiput at anterior (O.A.).

(4) Types of breech presentations (see figure 10-4).

(a) Complete or full breech. This involves flexion of the fetus legs. It looks like the fetus is sitting in a tailor fashion. The buttocks and feet appear at the vaginal opening almost simultaneously.

(b) Frank and single breech. The fetus thighs are flexed on his abdomen. His legs are against his trunk and feet are in his face (foot-in-mouth posture). This is the most common and easiest breech presentation to deliver.

(c) Incomplete breech. The fetus feet or knees will appear first. His feet are labeled single or double footing, depending on whether 1 or 2 feet appear first.

(5) Observations about positions (see figure 10-5).

(a) LOA and ROA positions are the most common and permit relatively easy delivery.
(b) **LOP** and **ROP** positions usually indicate labor may be longer and harder, and the mother will experience severe backache.

![Diagram of fetal vertex presentations](image)

Figure 10-5. Examples of fetal vertex presentations in relation to quadrant of maternal pelvis.

(c) Knowing positions will help you to identify where to look for FHT's.

1. Breech. This will be upper **R** or **L** quad, above the umbilicus.

2. Vertex. This will be lower **R** or **L** quad, below the umbilicus.

(d) An occiput in the posterior quadrant means that you will feel lumpy fetal parts, arms and legs (see figure 10-5 A). If delivered in that position, the infant will come out looking up.

(e) An occiput in the anterior quadrant means that you will feel a more smooth back (see figure 10-5 B). If delivered in that position, the infant will come out looking down at the floor.
10-3. FETAL ADAPTATIONS (OR THE MECHANISM OF LABOR)

a. Cardinal Movements. This refers to the movements made by the fetus during the first and second stage of labor. As the force of the uterine contractions stimulates effacement and dilatation of the cervix, the fetus moves toward the cervix. When the presenting part reaches the pelvic bones, it must make adjustments to pass through the pelvis and down the birth canal (see figure 10-6).

Figure 10-6. The mechanism of labor in the left occiput anterior (LOA) presentation.
b. **Fetus in the Vertex Position.** The fetus in the vertex position makes seven adaptations or cardinal movements. Refer to figure 10-6.

1. **Descent.** The fetus head is pushed deep into the pelvis in a sideways position, the face is to the left and the occiput is to the right.
   
   (a) In a primigravida, this may occur two weeks before delivery. This is referred to as "lightening." Lay people might call this "dropping."
   
   (b) In a multipara, this may not occur until dilatation of the cervix.

2. **Flexion.** As the fetus head descends, the chin is flexed to come into contact with the infant's sternum. The occiput position allows the occipital bone in the back of the head to lead the way (smallest diameter of the head).

3. **Engagement.** This is when the presenting part is at the level of the ischial spines or at a zero (0) station. Before this time, it is referred as "floating."

4. **Internal rotation.**
   
   (a) The amount of internal rotation depends on the position of the fetus and the way the head rotates to accommodate itself to the changing diameters of the pelvis.
   
   (b) If the fetus starts to descend in **LOA** or **LOT**, rotation is only a short distance-45 to 90 degrees.
   
   (c) If the head is in a posterior position, it may mean a turn of 180 degrees.
   
   (d) Occasionally, the fetus may not turn to the anterior position and is born O.P. (occiput posterior).

5. **Extension.** As the previously flexed head slips out from under the pubic bone, the fetus is forced to extend his head so that the head is born pushing upward out of the vaginal canal. The natural curve of the lower pelvis and the baby's head being pushed outward forces distention of the perineum and vagina. As it moves through the vaginal canal, the chin lifts up (extends) and the head is delivered. During this maneuver, the fetal spine is no longer flexed, but extends to accommodate the body to the contour of the birth canal.

6. **External rotation restitution.**
   
   (a) Once the fetus head is out, it will turn to line up with its back, revealing its position just before internal rotation of the head. This is called restitution.
(b) This aids in internal rotation of the shoulders to an anteroposterior diameter of the pelvic outlet or shoulder rotation.

(7) Expulsion.

(a) The top of the anterior shoulder is seen next just under the pubis.

(b) Gentle downward pressure by the physician delivers the anterior shoulder.

(c) The head is gently raised to deliver the posterior shoulder.

(d) The rest of the body follows the head, which then completes expulsion.

(e) The fetus remains completely passive as it moves through the birth canal.

c. Movement. The first four movements (descent, flexion, engagement, and internal rotation) do not have to occur in any specific order.

10-4. CLOSING

A general understanding of how the fetus may present itself during labor will help you to understand why some labors are so long and difficult. In addition, this will help you in understanding what the fetus must go through during the process of presenting himself out of the patient's womb.

Continue with Exercises

Return to Table of Contents
INSTRUCTIONS: Answer the following exercises by marking the lettered response that best answers the exercise, by completing the incomplete statement, or by writing the answer in the space(s) provided.

After you have completed all of these exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. List the three types of presentations.
   ____________________________.
   ____________________________.
   ____________________________.
   ____________________________.

2. ________ refers to the position of the spinal column of the fetus in relation to the spinal column of the mother.

3. List the four types of attitudes.
   ____________________________.
   ____________________________.
   ____________________________.
   ____________________________.

4. What areas should be looked at for flexion?
   __________, __________, __________, __________.

5. The entrance of the presenting part of the fetus into the true pelvis or the largest diameter of the presenting part into the true pelvis is known as:
   ____________________________.
6. The maternal pelvis is divided into ____________________.

7. Describe the following types of breech positions.

   Complete or full breech- _____________________________________________
   _____________________________________________

   Frank and single breech - _____________________________________________
   _____________________________________________

   Incomplete breech - _____________________________________________
   _____________________________________________

8. List the seven adaptations or cardinal movements that the fetus makes while in the vertex position.

   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
For exercises 9 through 16. The following phrases, terms, or definitions in Column A are closely related to the information listed in Column B. Place the letter of the correct answer in the spaces provided to the left of Column A.

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>___10. Fetus head is partially flexed or not flexed.</td>
<td>b. Longitudinal/transverse.</td>
</tr>
<tr>
<td>___11. Degree of flexion of the fetus body parts to each other.</td>
<td>c. Most common/easy delivery.</td>
</tr>
<tr>
<td>___15. &quot;Lie&quot; positions.</td>
<td>g. Attitude.</td>
</tr>
<tr>
<td>___16. Direction on the presenting part of fetus to the pelvis of the mother.</td>
<td>h. Side of the pelvis of the fetus reference point.</td>
</tr>
</tbody>
</table>

Check Your Answers on Next Page
SOLUTIONS TO EXERCISES, LESSON 10

1. vertex or cephalic.
   Breech.
   Shoulder. (para 10-2b(1))

2. lie (para 10-2a).

3. complete flexion.
   moderate flexion or military attitude.
   poor flexion or marked extension.
   hyperextended. (para 10-2c(1))

4. head.
   Arches.
   Thighs.
   arms (para 10-2c(2)).

5. engagement (para 10-2e).

6. quadrants (para 10-2f(1)).

7. Complete or full breech--involves flexion of the
   legs. The fetus seems to be sitting in a tailor fashion.
   Frank and single breech--the fetus thighs are
   flexed on his abdomen, legs against his trunk, and feet are in his face.
   Incomplete breech--fetus feet or knees will
   appear first. (para 10-2f(4))

8. descent.
   flexion.
   engagement.
   internal rotation.
   extension.
   external rotation restitution.
   expulsion. (para 10-3b)

9. e (para 10-2b(3)).

10. d (para 10-2c(1)(b)).

11. g (para 10-2c).
12. a (para 10-2d(4)).
13. h (para 10-2f(3)(a)).
14. c (para 10-2f(5)(a)).
15. b (para 10-2a).
16. f (para 10-2f).