Reproductive System — Female

Chapter 8

Organs of the Female Reproductive System

- Ovaries
- Fallopian tubes
- Uterus
- Vagina
- Vulva
- Mammary glands

Ovaries

- Two ovaries located on each side of the uterus within the pelvic cavity
- Production of estrogen and progesterone, which affects puberty, menstruation, and pregnancy
Function of the Female Reproductive System

- Extend laterally at superior angle from the uterus
- Pathway of ovum into uterus
  - fingerlike projections that propel the ovum into the oviduct

Uterus

- Muscular, hollow, pear-shaped structure suspended by ligaments in the pelvic cavity (see illustration)
- Responsible for housing and nourishing the embryo from implantation of the fertilized egg until birth

Mammary glands

- Glandular lobes located in the breast of females that contain milk ducts, which lead to an opening in the nipple of the breast
- Not directly involved in reproduction
- More important after delivery
- Production of milk to nourish neonate after birth
Fertilization

– An ovum leaves the ovaries and travels through the fallopian tube.

– Fertilization takes place if sperm cells are present and unite with the ovum.

– Fertilized egg implants then divides to form a ball of cells, called a _____________ (and later an ___________ and then a _______________).

Pregnancy

– If fertilization occurs, the egg implants in the uterine endometrium.

– Placenta forms within the uterine wall

– Amnion holds the fetus in an amniotic cavity

– Nutrients, oxygen and wastes exchange between fetus and mother

– Placenta produces human chorionic gonadotropin (hCG)

Pregnancy

A. Implantation in the uterus.
B. Embryo's relationship to the placenta
Pregnancy

- ______________________________ maintains placenta development
- Uterus expands as fetus grows
- Normal delivery fetal position in ___________________________
  (head first)

Structure and Function Exercise

1. Where are the ovaries located?

2. What is the biological role of mammary glands?

________________________ is the period from the fertilization of the ovum until birth.

________________________ refers to the process of giving birth.
Combining Forms – p. 332

• Amni/o

• Cerivc/o

• galact/o
• Lact/o

Combining Forms – p. 332

• Gy nec/o

• Hyster/o
• Uter/o

• Mamm/o
• Mast/o

Combining Forms – p. 332

• Men/o

• Metr/o
Building Terms

- Amni/o/centsis
- Amni/o
- -Centsis

Building Terms

- Gynec/o/logist
- Gynec/o-
- -logist-

Building Terms

- Hysterectomy
- hyster–
- -ectomy–
Building Terms

• Mammogram

• Mamm/o –

• -gram –

Building Terms

• Endometritis

• Endo –

• Metr –

• -itis –
Combining Forms – p. 333

- nat/o
- Oophor/o
- Ovari/o
- Perine/o
- Salping/o
  (the area between the anus and the scrotum or vulva)

Define Suffixes – p. 333

- -arche
- -gravida
- -para
- -salpinx
- -cyesis:

Define Suffixes – p. 333

- -tocia
- -version
1. pertaining to (the period) before birth: 
   __/__/__

2. pregnant woman (for the) first time: 
   primi/_____

3. pregnancy (that is) false: ____/o/cyesis

Build Medical Words

bad, painful, or difficult labor or childbirth: ___/tocia

to bear (offspring) many times: 
   ____/para

Build Medical Words

inflammation of the cervix uteri (neck of the uterus):

surgical puncture of the amnion (amniotic sac):

specialist in the study of female (disorders):
Build Medical Words

tumor of an ovary:

visual examination of the uterus:

excision or removal of the breast:

Prefixes Reviews

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>dys-</td>
<td>painful</td>
</tr>
<tr>
<td>endo-</td>
<td>within</td>
</tr>
<tr>
<td>in-</td>
<td>in</td>
</tr>
<tr>
<td>intra-</td>
<td>within (intrauterine)</td>
</tr>
<tr>
<td>multi-</td>
<td>many (multipara)</td>
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</tbody>
</table>

Prefixes

<table>
<thead>
<tr>
<th>Prefix</th>
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<tbody>
<tr>
<td>pre-</td>
<td>before (prenatal)</td>
</tr>
<tr>
<td>primi-</td>
<td>first (primipara)</td>
</tr>
</tbody>
</table>
Pathology: Uterus

- Carcinoma of the cervix
  - Malignant cells within the cervix
- Cervicitis
  - Inflammation of the cervix
- Carcinoma of the endometrium
  - Malignant tumor of the uterus
- Endometriosis
  - Endometrial tissue located outside the uterus

Pathology: Uterus

- Fibroids
  - Benign tumors of the uterus
  - Figure shows location of uterine fibroids.

Ectopic Pregnancy

Fertilized ovum implants and grows in places other than the uterine cavity.

Common site is interior of the fallopian tube.
Ectopic Pregnancy

**Treatment**
- Laparotomy with attempts to save the ovary
- Ruptured fallopian tube may require removal
- All attempts are made to save the ovary
- Blood transfusion may be necessary in severe intra-abdominal bleeding or hypovolemic shock.

Pathology: Ovaries

- **Ovarian carcinoma**
  - Malignant tumor of the ovary
- **Ovarian cysts**
  - Collections of fluid within a sac in the ovary
- **Fallopian Tubes**
  - Pelvic inflammatory disease

Pathology: Breast

- **Breast**
  - Carcinoma of the breast
  - Fibrocystic disease
Breast Cancer

• **Signs and Symptoms**
  • Early symptoms include swelling, lump, dimpling, retraction of nipple, discharge from nipple, tenderness.
  
  • Advanced symptoms include nodularity, redness, edema, ulceration of skin, enlargement or shrinkage of breast.

• **Signs and Symptoms** (continued)
  • Most common malignancy of women in the United States.
  • Appears to be associated with ovarian hormonal function.
  • High-fat diet appears to increase the incidence of breast cancer.

• **Signs and Symptoms** (continued)
  • Family history of breast cancer.
  • Possibly use of hormone replacement therapy (HRT), especially for prolonged periods of time.
Breast Cancer - Treatment

Lumpectomy. Primary tumor in red; surrounding tissue removed in pink.

- Excision of a small primary breast tumor and some of the normal tissue that surrounds it.

Breast Cancer - Treatment

Modified radical

- Excision of the entire breast, including lymph nodes in the underarm (axillary dissection)

Modified radical mastectomy

Breast Cancer - Treatment

- Adjuvant chemotherapy may be indicated after surgery if malignant cells are found in the lymph nodes.

- Any combination of surgery, radiation, chemotherapy, and hormonal therapy.

- Most women who have mastectomies today have modified radical mastectomies.
Clinically Related Exercise

Sasha is diagnosed with breast cancer and asks the doctor the types of treatments prescribed for breast cancer besides surgery.

Clinically Related Exercise

4. Mary is scheduled for a modified radical mastectomy to treat her breast cancer. This surgical procedure involves removal of the entire breast and excision of the underarm lymph nodes. The medical term for removal of the lymph node is ____________.

Vocabulary Challenge Exercise

1. curet:

2. fistula:
Vocabulary Challenge Exercise

3. gametes:

4. gestation:

PATHOLOGY: Pregnancy

• Placenta abruptio

• Placenta previa
  — placental implantation over the cervical opening

Transverse position  Placenta abruptio
Breech presentation  Placenta previa
Diagnostic Procedures

• Amniocentesis
• Colposcopy
• Laparoscopy
• Mammography
• Pap Smear
• Ultrasongraphy

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Diagnostic Procedures

Visual examination of abdominal cavity with a laparoscope through one or more small incisions in the abdominal wall, usually at the umbilicus.

Clinical Procedures

Gynecological procedures

- Ovary placed in plastic bag.
- Extracted through the laparoscope
Diagnostic Procedures

• **Colposcopy**
  – Examination of the cervix, vagina, and vulva with a colposcope.
  • Used to detect signs of disease.

• **Hysterosalpingography**
  – Radiography, and usually fluoroscopy of the uterus and uterine tubes.
  – Radiography is performed following injection of a contrast medium.

Diagnostic Procedures

• **Mammography**
  – Radiography of the breast to detect tumors, cysts, and microcalcifications, and to locate a malignant lesion.

• **Pap test**
  – Detects abnormal cells in cervix and vagina.

Medical and Surgical Procedures

• **Dilation and Curettage (D&C)**
  – Widening of cervical canal with a dilator
  – Scraping the uterine endometrium with a curet.
Medical and Surgical Procedures

- Transabdominal puncture of the amniotic sac under ultrasound guidance to remove amniotic fluid.

Hysterectomy with structure shaded purple
- Subtotal hysterectomy (cervix not removed).
- Total hysterectomy (cervix removed)
- Total hysterectomy plus bilateral salpingo-oophorectomy

Medical and Surgical Procedures

Reconstructive breast surgery
- Tissue (skin) expansion
  - Breast reconstruction in which a balloon expander is inserted beneath the skin and chest muscle.
  - Saline solution is gradually injected to increase size, and expander is replaced with a permanent implant.
Pharmacology

- Used to treat vaginal yeast infections
- Alter cell wall of fungi or disrupt enzyme activity
  - Results in cellular death

- Estrogen replacement therapy (ERT) to correct estrogen deficiency
- Chemotherapy for some types of cancer

Pharmacology

• Hormone replacement therapy
  - Used to correct deficiency of estrogen, progesterone, testosterone
    - Relieves symptoms of menopause
    - Prevents osteoporosis in women

Pharmacology

• Oral contraceptives (OCPs)
  - Synthetic hormones used to prevent pregnancy
    - Used to treat menstrual disorders
    - Also known as birth control pills
Abbreviations

• See page 366 in text for complete list and definitions

• Gyn

• Ob

• P1 G1