OVARIES AND FALLOPIAN TUBE

LEARNING OBJECTIVES

At the end of the lecture the student should be able to:
Identify ovaries and fallopian tubes
Know the parts of ovaries and fallopian tubes
Identify the ligaments of ovaries
Enumerate the clinical correlates of ovaries and uterine tubes

INTERNAL ORGANS OF THE FEMALE

Ovaries, fallopian tubes, uterus, cervix, vagina

OVARIES

Oval
Almond-shaped
3 cm long
1.5 cm wide
1 cm thick
Rest in the ovarian fossa, immediately adjacent to the iliac vessels and the ureters
Contain primary ovarian follicles
Surface of ovary is not covered by peritoneum
  • Oocyte expelled into peritoneal cavity
**OVARIAN LIGAMENTS**

Ovarian ligament (also called the utero-ovarian ligament) is a fibrous ligament that connects the ovary to the lateral surface of the uterus.

**OVARIES LIGAMENTS**

Mesovarium is the portion of the broad ligament of the uterus that covers the ovaries.

*Suspensory ligament of the ovary, also infundibulopelvic ligament* (commonly abbreviated IP ligament or simply IP), is a fold of peritoneum that extends out from the ovary to the wall of the pelvis.
- Contains ovarian vessels and nerves

**BROAD LIGAMENT**

Contains between its layers the fallopian tube; the ovary and the round ligament; the uterine and ovarian blood vessels, nerves, lymphatics, and fibromuscular tissue; and a portion of the ureter as it passes lateral to the uterosacral ligaments over the lateral angles of the vagina and into the base of the bladder

**OVA PRODUCTION**

By the fifth week of embryonic life, germ cells have formed the ovary
Maximum # of eggs the ovary is able to produce is at 20 weeks of gestation... 6-7 million!
1-2 million at birth
300,000 at the onset of puberty
OVARIAN DESCEND

The ovary also descends, following a gubernaculum, but it does not exit into an extra-abdominal position like the testes. It ends its descent just below rim of bony pelvic girdle. The ovary’s gubernaculum persists in the adult as a pair of fibrous cords that RUN THROUGH A VESTIGAL INGUINAL CANAL, and insert into the LABIA MAJORA.

OVARIAN VESSELS

Ovarian arteries
- Originate directly from the aorta, inferior to the renal arteries.
- Most frequently identified at the IP ligament.

Ovarian veins:
- Left ovarian vein drains into the left renal vein
- Right ovarian vein drains directly into the inferior vena cava.

POLYCYSTIC OVARY SYNDROME (PCOS)

POLYCYSTIC OVARY SYNDROME (PCOS) is one of the most common female endocrine disorders. Ovaries are stimulated to produce excessive amounts of male hormones, particularly testosterone, either through the release of excessive LH by the anterior pituitary gland or through high levels of insulin in the blood (hyperinsulinaemia) in women whose ovaries are sensitive to this stimulus.

POLYCYSTIC OVARY SYNDROME (PCOS)

Major signs and symptoms
- Obesity
- Anovulation (resulting in irregular menstruation)
- Amenorrhea
Acne
Excessive amounts or effects of androgenic (masculinizing) hormones
The syndrome acquired its most widely used name due to the common sign on ultrasound examination of multiple (poly) ovarian cysts.

**FALLOPIAN TUBE**

Also known as **oviducts, uterine tubes, and salpinges** (*singular salpinx*) are two very fine tubes lined with ciliated epithelia, leading from the ovaries of female into the uterus. 10 cm. long
Convey the ova from the ovaries to the cavity of the uterus. Gabriele Falloppio

**PARTS OF FALLOPIAN TUBE**

**ISTHMUS** or medial constricted third;

**AMPULLA,** or intermediate dilated portion, which curves over the ovary

**INFUNDIBULUM** with its abdominal ostium, surrounded by fimbriae, one of which, the **OVARIAN FIMBRIA** is attached to the ovary
The tubal ostium is the point where the tubal canal meets the peritoneal cavity
Uterine opening of the Fallopian tube is the entrance into the uterine cavity, the utero-tubal junction.

**EPITHELIUM**

The uterine tube consists of three coats:
**External or serous coat** is peritoneal.
**Middle or muscular coat** consists of an external longitudinal and an internal circular layer of muscular fibers continuous with
those of the uterus. **Internal or mucous coat** is continuous with the mucous lining of the uterus, and, at the abdominal ostium of the tube, with the peritoneum. The lining epithelium is columnar and ciliated.

**FUNCTION OF FALLOPIAN TUBE**

On maturity of the ovum, the follicle and the ovary’s wall rupture, allowing the ovum to escape. The egg is caught by the fimbriated end and travels to the ampulla where typically the sperm are met and fertilization occurs. The fertilized ovum, now a zygote, travels towards the uterus aided by activity of tubal cilia and activity of the tubal muscle. After about five days the now embryo enters the uterine cavity and implants about a day later.

Note that there is no direct connection between ovary and uterine tube. Ovulation releases oocyte by rupture into peritoneal cavity. *Fimbriae* of uterine tube guide oocyte into uterine tube. Fertilization occurs immediately after ovulation, high in uterine tube at or near *fimbriae*.

**TUBAL PREGNANCY**

Occasionally the embryo implants into the Fallopian tube instead of the uterus, creating an ectopic pregnancy, commonly known as a "tubal pregnancy". An ectopic pregnancy is a potential medical emergency, and, if not treated properly, can lead to death.

**FALLOPIAN TUBE OBSTRUCTION**

**Fallopian tube obstruction** is a major cause of female infertility. Blocked fallopian tubes are unable to let the ovum and the sperm converge, thus making fertilization impossible. A hysterosalpingogram will demonstrate that tubes are open when the radioopaque dye spills into the uterine cavity.
CAUSES
Pelvic inflammatory disease
Fallopian tube cancer is a rare neoplasm

Tubal ligation

SURGERY
The surgical removal of a Fallopian tube is called a salpingectomy. To remove both sides is a bilateral salpingectomy. An operation that combines the removal of a Fallopian tube with removal of at least one ovary is a salpingo-oophorectomy. An operation to restore a fallopian tube obstruction is called a Tuboplasty.

THANK YOU