

PELVIC INFLAMMATORY DISEASE (PID)

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OBJECTIVES

- Definition of PID
- Prevalence rate of PID
- Causes of PID
- Symptoms of PID
- Risk factors
- Investigations to diagnose PID
- Treatment
- Prevention

PID

PID is an infection of the female reproductive organ. It is one of the most serious complications of a sexually transmitted disease (STD) in women which can lead to irreversible damage to the uterus, ovaries, fallopian tubes or other parts of the female reproductive system, and it is the primary preventable cause of infertility in women.

Prevalence Rate

Every year, more than one million women in the US experience an episode of PID. As a result of this, more than 100,000 women become infertile each year.

The highest incidence is seen among sexually active women in their teens, with 75% of cases being under 25 years.

Causes

Normally, the cervix prevents bacteria that enter the vagina from spreading to internal reproductive organs. If the cervix is exposed to STDs such as gonorrhea and chlamydia, the cervix itself becomes infected and less able to prevent the spread of organisms to the internal reproductive organs.

Untreated gonorrhea causes about 90% of PID.

Other causes include: abortions, childbirth, pelvic procedures.

Symptoms

Symptoms can vary from patient to patient but may include the following:

- dull pain or tenderness in the lower abdominal area
- Abnormal vaginal discharge that is yellow or green in color and that has an unusual odor
- Painful urination
- Chills or high fever

Symptoms contd

- Nausea and vomiting
- Pain during sex

Risk Factors

- Women with STDs especially gonorrhea and chlamydia
- Women with prior episodes of PID
- Sexual active teenagers
- Women with many sexual partners

Some studies suggest that douching may contribute to PID. It may push bacteria into the upper genital tract and may mask the discharge that could alert a woman to seek medical care.

How is PID diagnosed?

- Blood tests
- Ultrasound
- Endometrial biopsy
- Laparoscopy

Ultrasound

- Frequently used, but no large trials of sensitivity and specificity
- Probably insensitive for mild abnormalities and non-specific for some findings
- Review of literature shows sensitivity/specificity depends upon findings considered to indicate PID, quality of equipment and imager. Trans-vaginal imaging most useful

Ultrasound findings

USG often only demonstrates ascitic fluid in the peritoneal cavity or nonspecific thickening and increased vascularity of the endometrium.

In the most severe cases, USG may show adnexal masses with a heterogeneous echopattern.

Some sonographic signs associated with tubal inflammation include:

- Thickened/dilated fallopian tubes
- Incomplete septa in the tube
- Increased vascularity around the tube
- Echogenic fluid in the tube (pyosalpinx)

Fluid in the POD



Indistinct borders

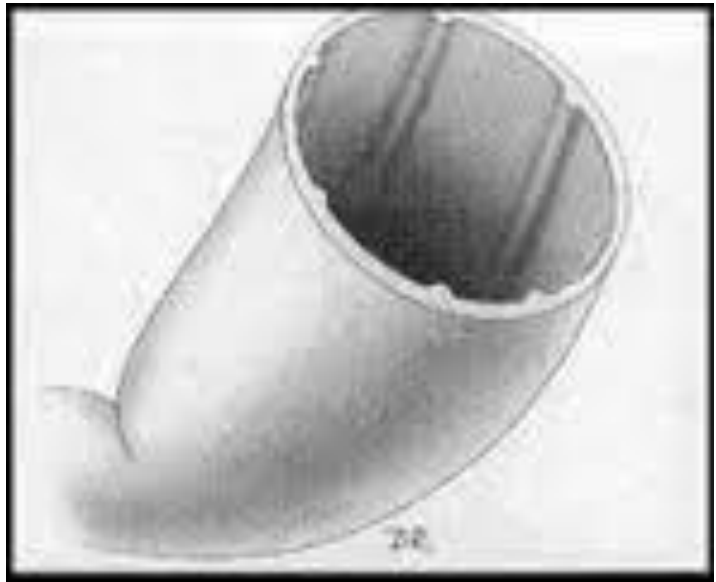
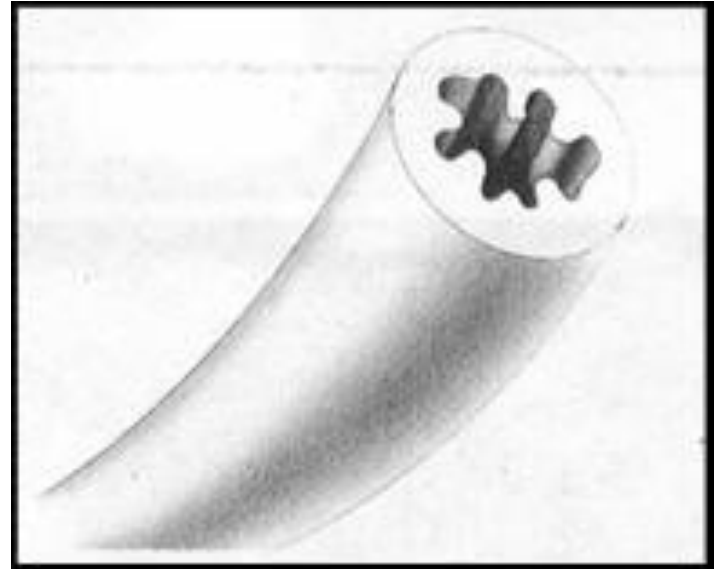
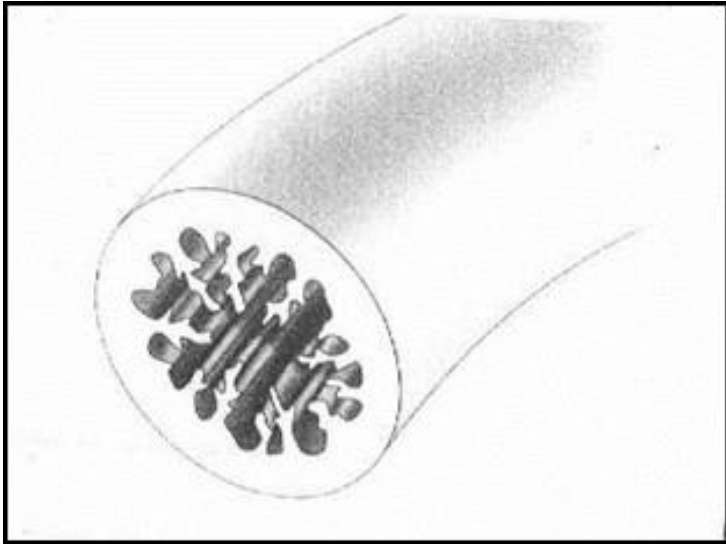


Inflammed Tubes

- Acute or Chronic
- Acute salpingitis- mild dilatation
- Pyosalpinx or hydrosalpinx- more dilatation

Acute or Chronic Salpingitis

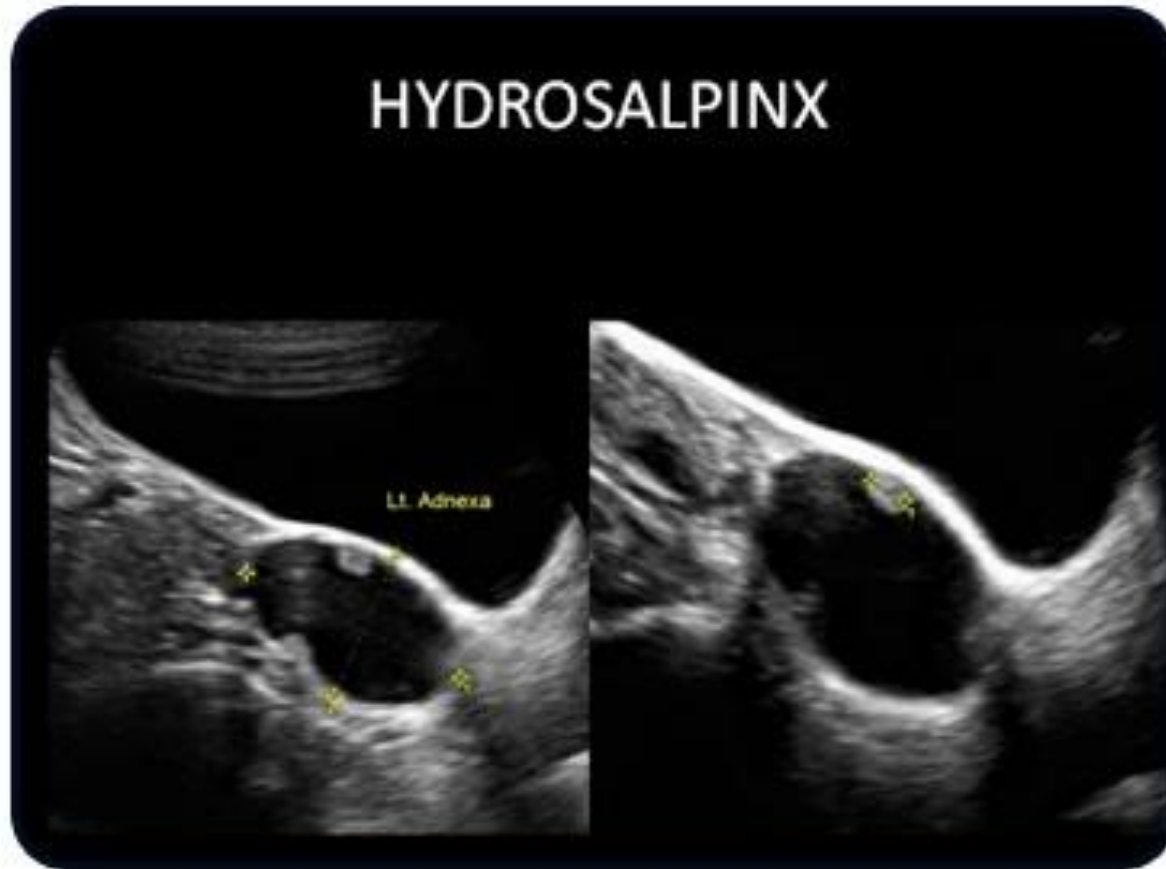
- Best marker: ovoid fluid filled structure with incomplete septum (protrusion arising from the wall)
- Thick wall ($>_5\text{mm}$) and “cogwheel” sign are best markers for acute
- Thin wall ($<_5\text{mm}$) and “beads on string” indicates chronic
- Other findings: tubular, “solid” structure separate from ovary, fluid/debris level, gas



Pyosalpinx



Hydrosalpinx



Treatment

- Antibiotics
- Surgery

Prevention

- Avoid multiple sexual partners
- Use barrier methods of birth control
- Avoid IUDs if you have multiple sexual partners
- Have regular gynecological check-ups and screenings

References

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- Rezvani M, Shaaban AM. Fallopian tube disease in nonpregnant patient. *Radiographics*. 31(2): 527-48.
- Horrow MM. ultrasound of pelvic inflammatory disease. *Ultrasound Q*. 2004;20(4):179-9.

THANK YOU