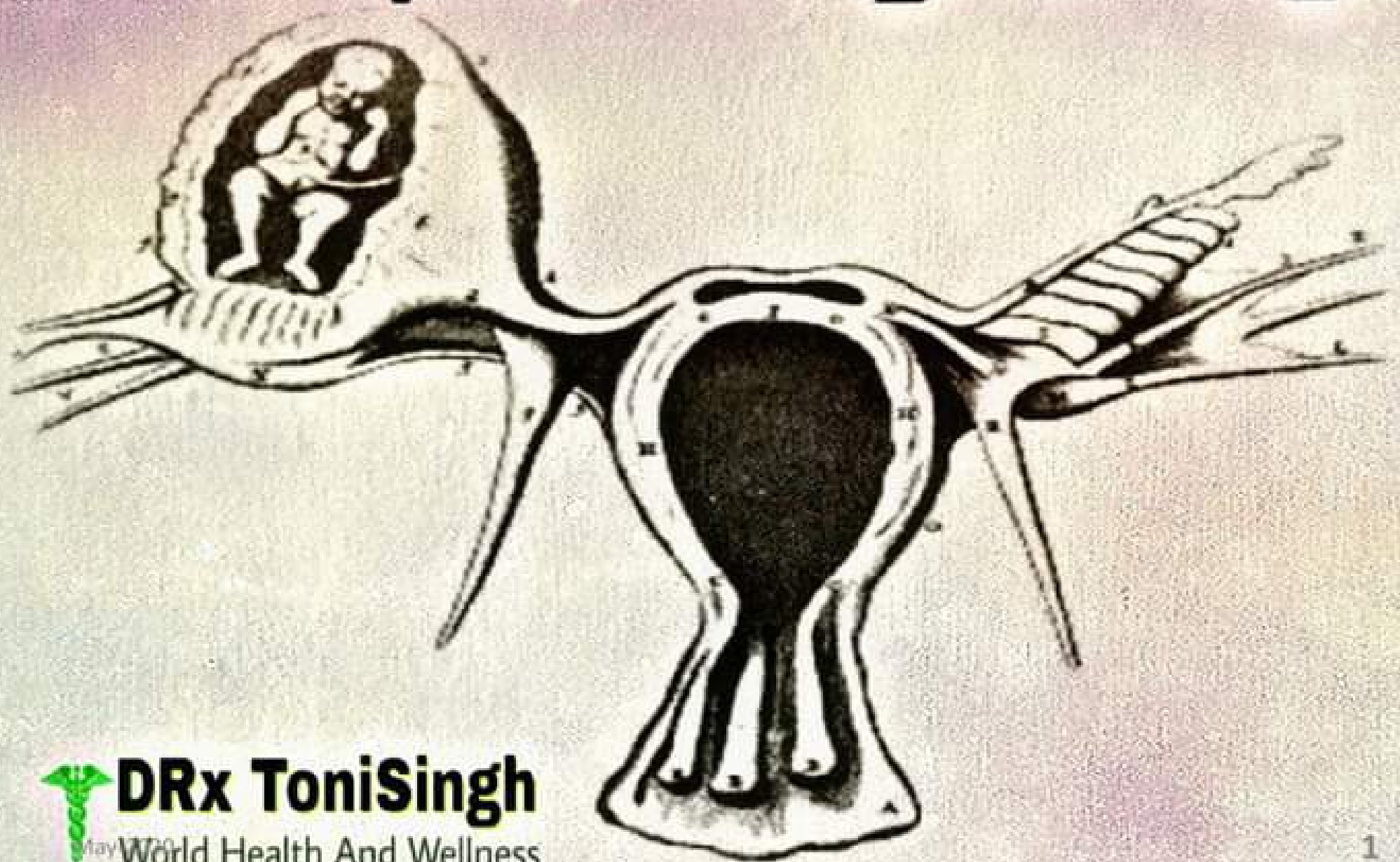


Ectopic Pregnancy



Normal Pregnancy Implantation

Pregnancy is the period during which a woman carries a developing fetus normally in the uterus, starting from conception (fertilization of ova) until the baby born.

After ovulation the ovum is picked up by the fimbria of fallopian tubes and then swept by ciliary action towards the ampulla where fertilization occurs.

As soon as the zygote develops it begins dividing very rapidly, it remains in the fallopian tube for 3 -4 days until it reaches morula stage (8-32 cell stage)



The embryo proceeds through the isthmus to the uterine cavity for up to 72 hours, by the sixth day it enters the uterus and begins to penetrate the decidua (endometrium) this is called implantation which takes place within the uterine cavity in normal positioned pregnancy .

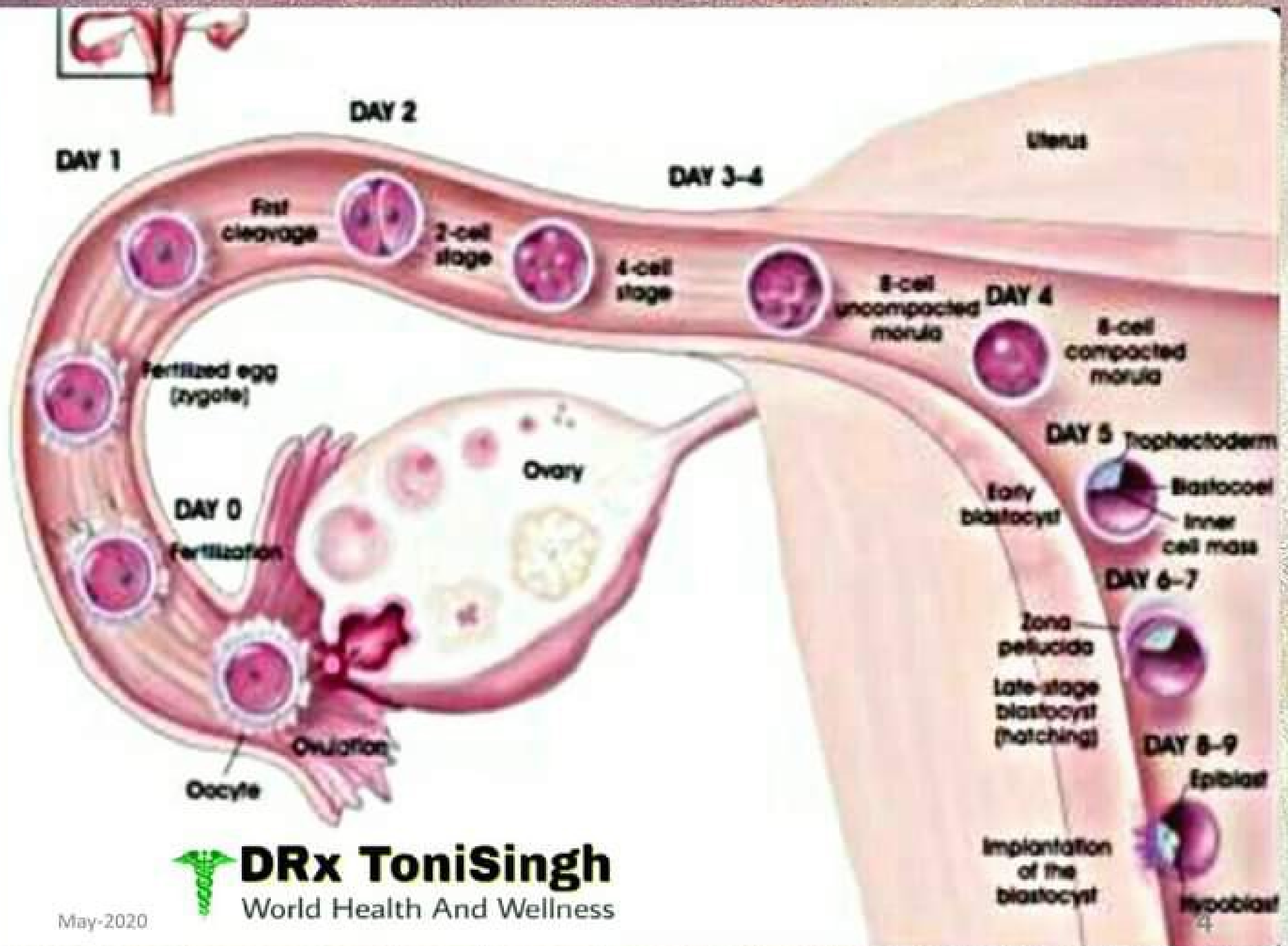


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Then hCG is produced by trophoblast, which can be detected in the serum of the mother in the first week after implantation, its level doubles every 36-48 hours in normal healthy pregnancy starting from 5 to 50 ,100, till reaching 1000 IU/L

Delay or obstruction of the passage of fertilized egg down the fallopian tube to the uterus may result in implantation in the fallopian tube or ovary or peritoneal cavity, this known as ectopic pregnancy which eventually most fails to develop , and the hCG fails to raise dramatically as happens in the normal intra uterine pregnancy.



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Ectopic Pregnancy

- ❖ **Ectopic pregnancy**, also known as **eccyesis** or **tubal pregnancy**, is a complication of pregnancy in which the embryo attaches outside the uterus.
- ❖ An **ectopic pregnancy** occurs when the fertilized egg attaches itself in a place other than inside the uterus.



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Classification

1- tubal pregnancy:

The vast majority of ectopic pregnancies 95-98 % implant in the Fallopian tube, among these:

10% in isthmus

5 % in fimbria

2% interstitial

2% in a rudimentary horn of a bicornuate uterus



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2-Nontubal ectopic pregnancy

Rare sites (2-5%) are;
The ovaries,
broad ligaments,
Abdominal cavity and peritoneum
cervix.



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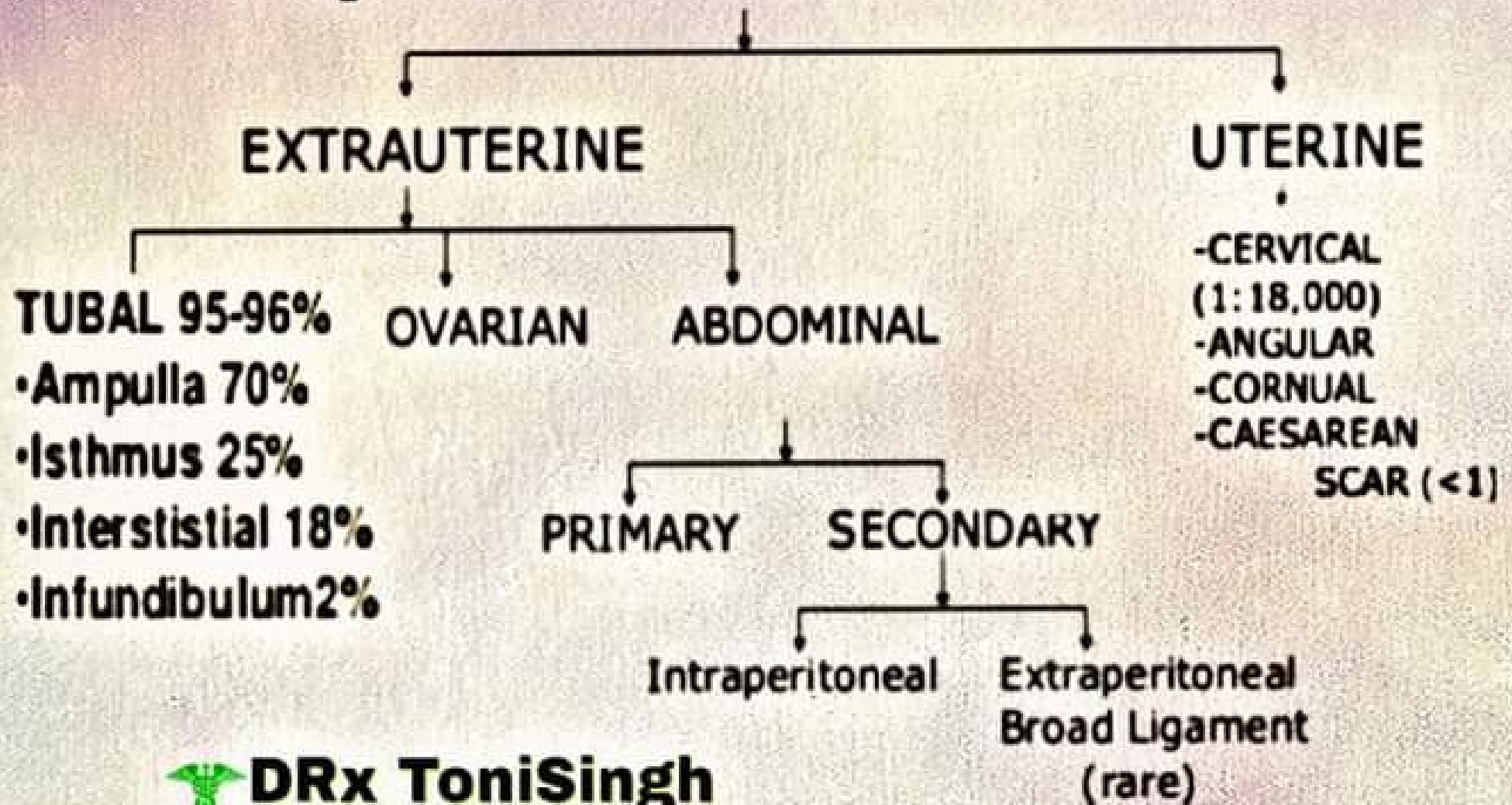
3-Heterotopic pregnancy

in rare cases of ectopic pregnancy 1/1000, there may be two fertilized eggs, one outside the uterus and the other inside. This is called a heterotopic pregnancy.

Often the intrauterine pregnancy is discovered later than the ectopic, mainly because of the painful emergency nature of ectopic pregnancies.



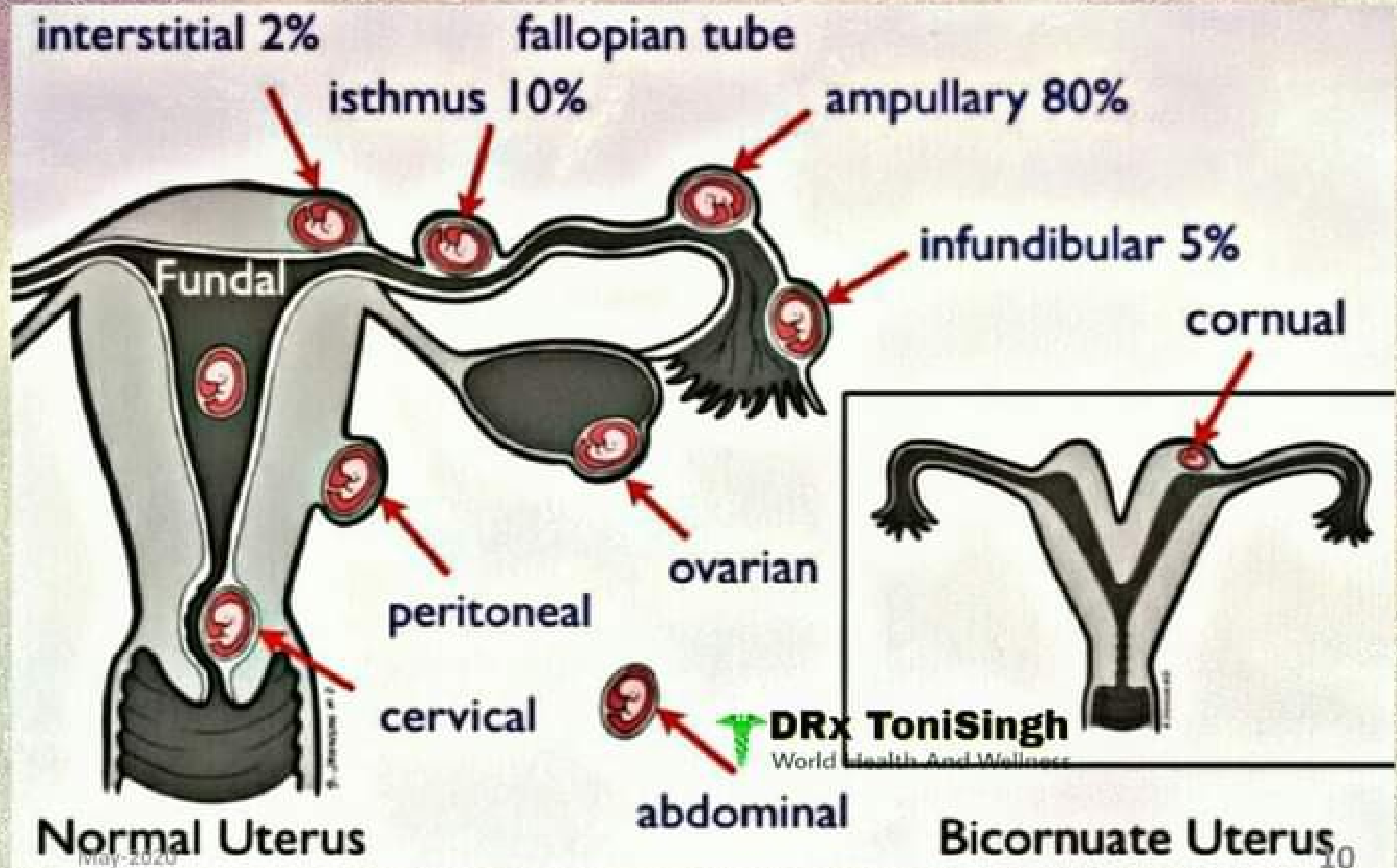
Implantations sites



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common sites for ectopic pregnancy



Incidence

- Increased due to PID, use of IUCD, Tubal surgeries, and Assisted reproductive techniques (ART).
- Ranges from 1:25 to 1:250
- Average range is 1 in 100 normal pregnancies.
- Late marriages and late child bearing -> 2%
- ART -> 5%
- Recurrence rate - 15% after 1st, 25% after 2 ectopics



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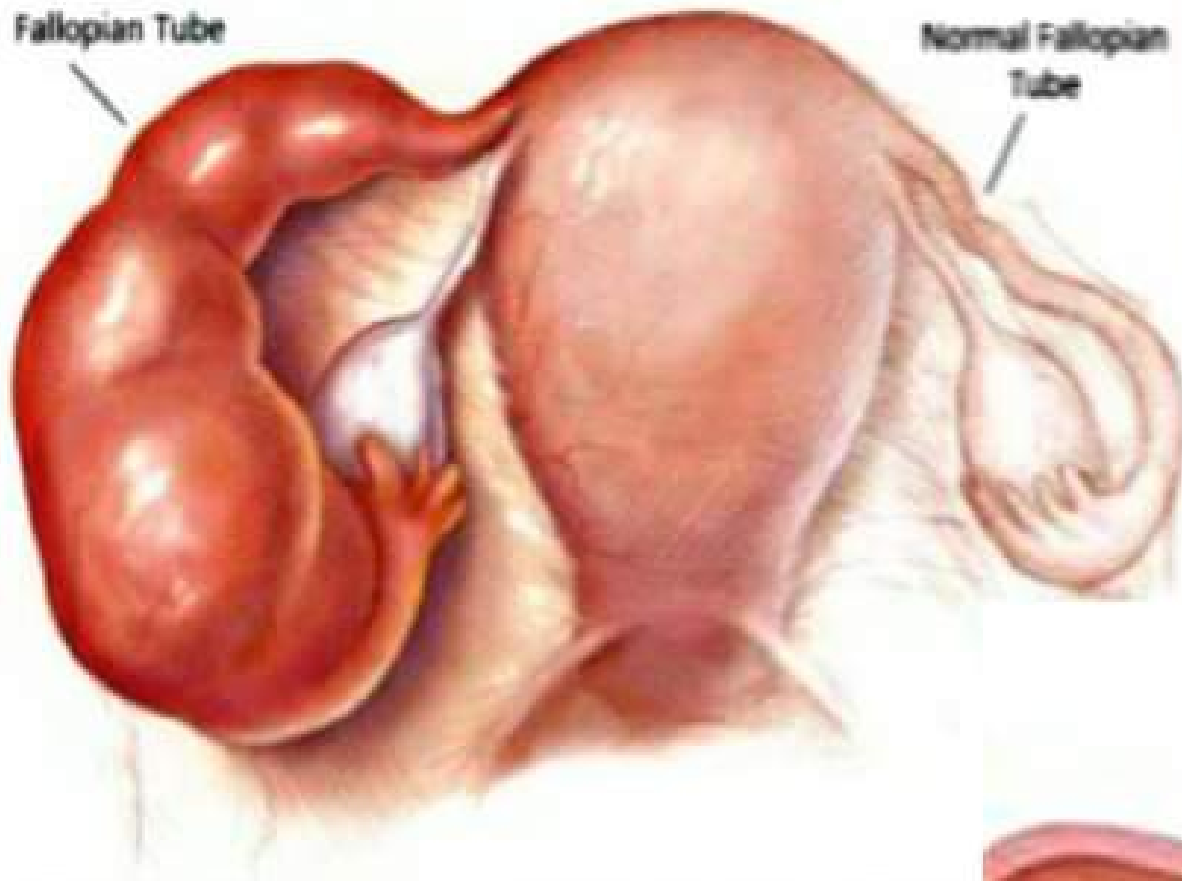
Etiology

- inflammation and scarring of the fallopian tubes from a previous medical condition, infection, or surgery
- hormonal factors
- genetic abnormalities or congenital abnormalities
- medical conditions that affect the shape and condition of the fallopian tubes and reproductive organs



Inflamed
Fallopian Tube

Normal Fallopian
Tube

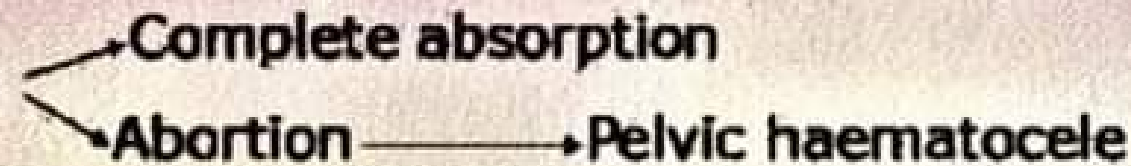


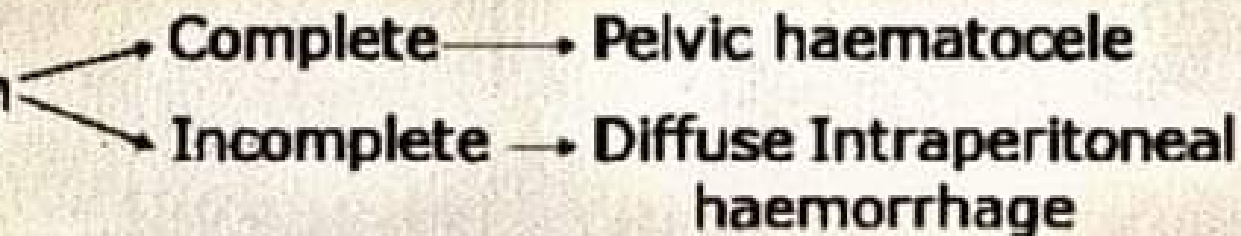
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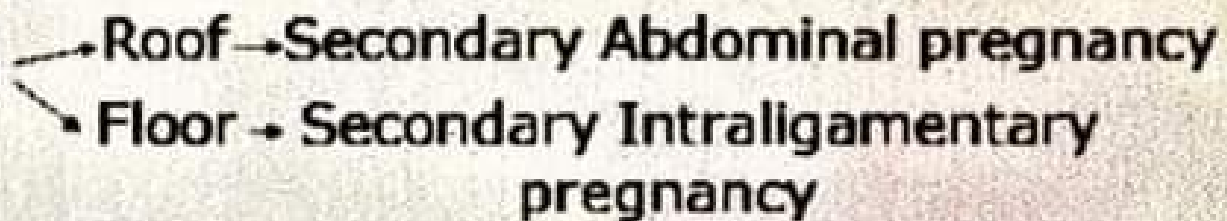
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Mode of Termination

1. Tubal mole 
Complete absorption
Abortion → Pelvic haematocoele

2. Tubal Abortion (18-20%) 
Complete → Pelvic haematocoele
Incomplete → Diffuse Intraperitoneal haemorrhage

3. Tubal Rupture 
Roof → Diffuse Intraperitoneal haemorrhage
Floor → Intraligamentary haematoma
(Isthmic – 6-8 wks, Ampullary – 8-12wks, Interstitial – 4 months)

4. Tubal Perforation 
Roof → Secondary Abdominal pregnancy
Floor → Secondary Intraligamentary pregnancy

5. Continuation of Pregnancy → rarest

Risk Factors

- maternal age of 35 years or older
- history of pelvic surgery, abdominal surgery, or multiple abortions
- history of pelvic inflammatory disease
- history of endometriosis
- conception occurred despite tubal ligation or intrauterine device (IUD)
- conception aided by fertility drugs or procedures
- smoking
- history of ectopic pregnancy



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- history of sexually transmitted diseases (STDs), such as gonorrhea or chlamydia
- having structural abnormalities in the fallopian tubes that make it hard for the egg to travel



Signs And Symptoms

- Nausea and breast soreness are common symptoms in both ectopic and uterine pregnancies.
- ❖ The following symptoms are more common in an ectopic pregnancy and can indicate a medical emergency:
 - sharp waves of pain in the abdomen, pelvis, shoulder, or neck
 - severe pain that occurs on one side of the abdomen
 - light to heavy vaginal spotting or bleeding
 - dizziness or fainting
 - rectal pressure



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Assessment And Diagnosis

- ☐ History collection

- ☐ Physical examination

 - pelvic exam to check for pain, tenderness, or a mass



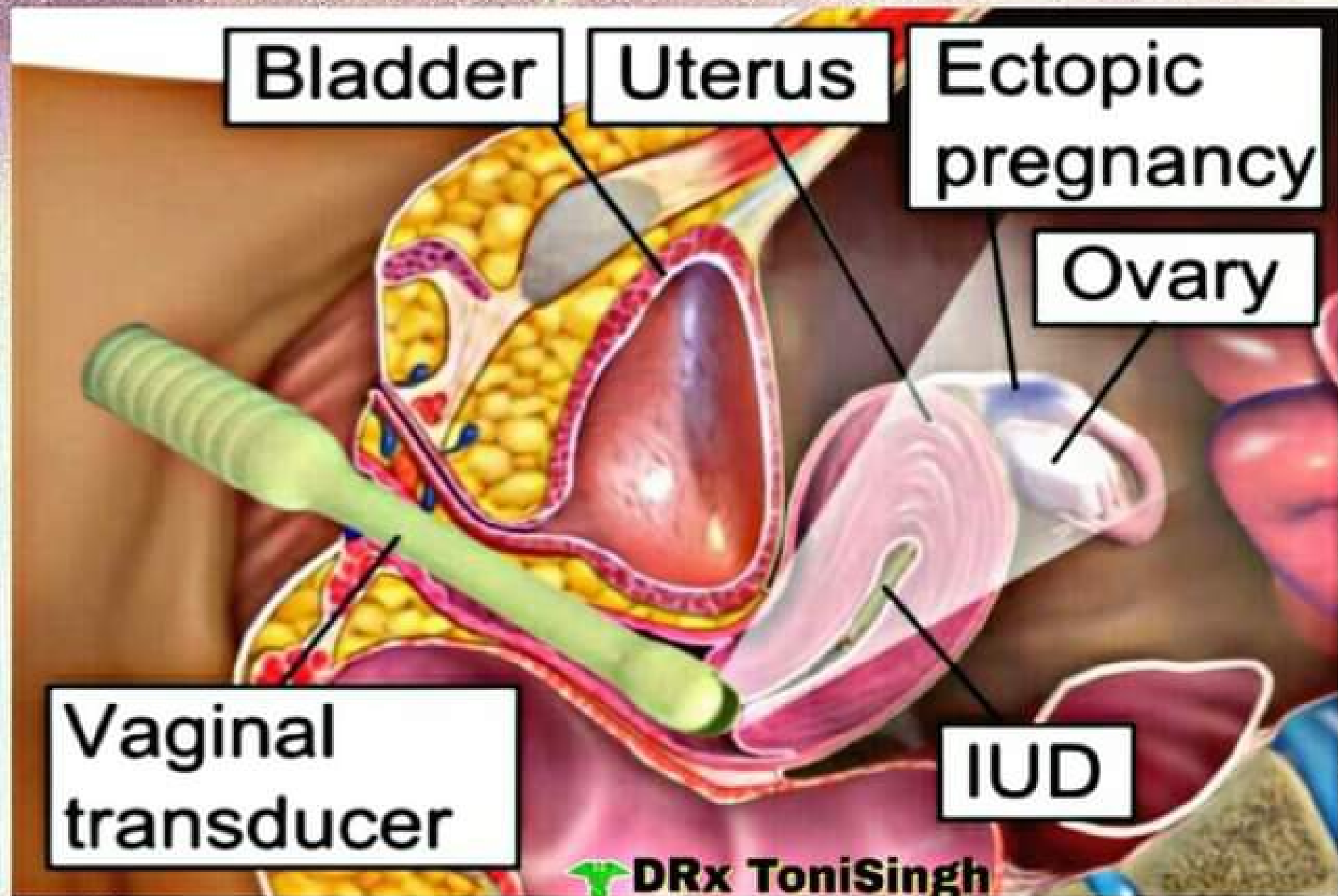
❖ hCG (human chorionic gonadotropin) level.

- ✓ The level of hCG double in early normal pregnancy every 3 days but are reduced in abnormal or ectopic pregnancy.

❖ Serum progesteron level.

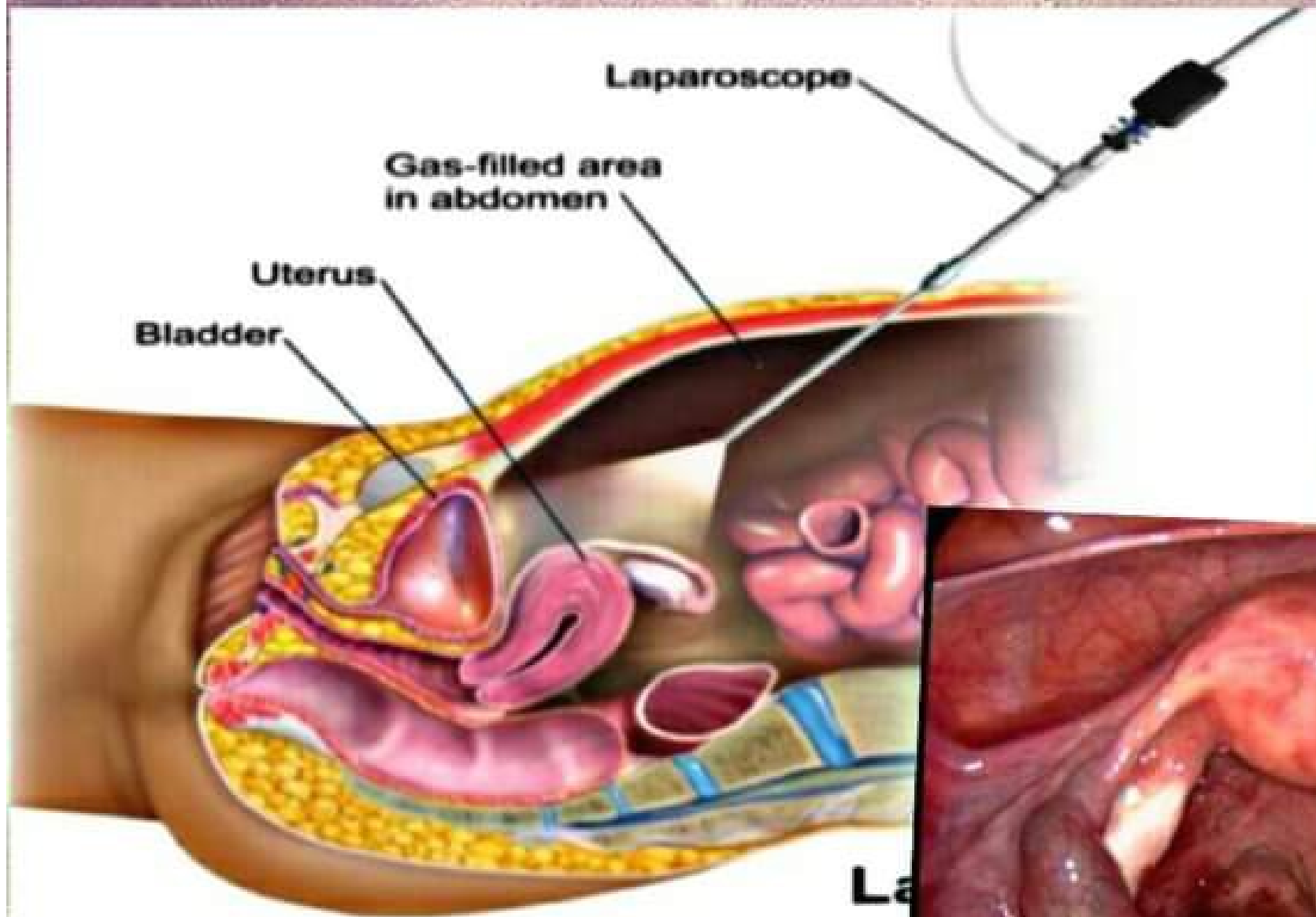
- ✓ Level less then 5ng/ml are considered abnormal; levels greater than 25 ng/ml are associated with a normally developing pregnancy.

TRANSVAGINAL ULTRASONOGRAPHY





LAPAROSCOPY

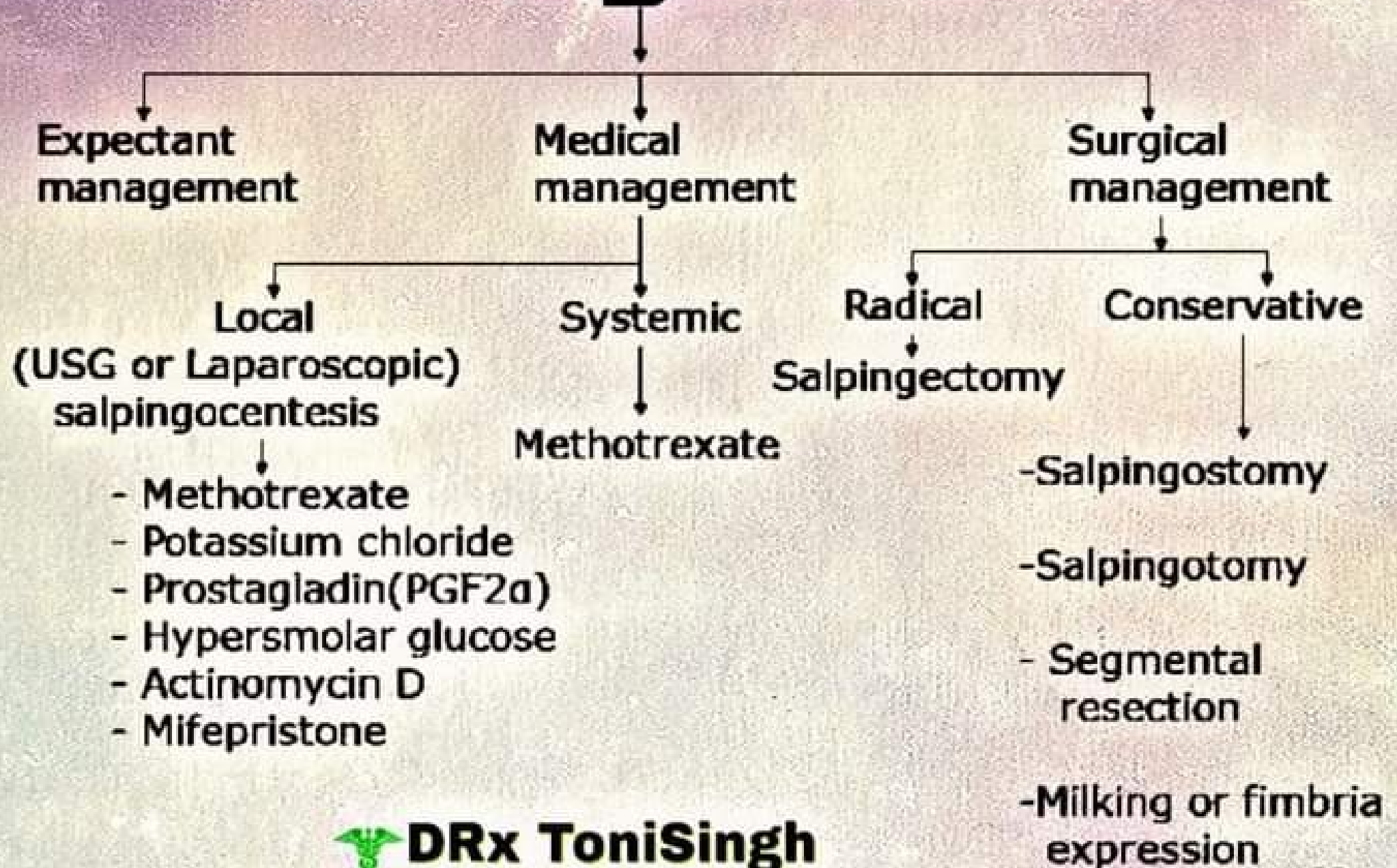


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Management



1 EXPECTANT MANAGEMENT

CRITERIA:

1. Haemodynamically stable
2. Haemoperitoneum < 50ml
3. Adnexal mass of < 3.5 cm without heart beat.
4. Initial β HCG <1000 IU/L and falling in titre

SUCCESS RATE - Upto 60%



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PROTOCOL:

- Hospitalization with strict monitoring of clinical symptom
- Daily Hb estimation
- Serum β HCG monitoring 3-4 days until it is <10 IU/L

TVS to be done twice a week.

2 MEDICAL MANAGEMENT

Surgery is the mainstay of T/t worldwide
Medical M/m may be tried in selected cases

CANDIDATES FOR METHOTREXATE (MTX)

- Unruptured sac < 4cm without cardiac activity or < 3.5 cm with cardiac activity
- S-hCG < 10,000 IU/L
- Persistent Ectopic after conservative surgery

PHYSICIAN CHECK LIST

- CBC, LFT, RFT, S-hCG
- Transvaginal USG within 48 hrs
- Obtain informed consent
- Anti-D Ig if pt is Rh negative
- Follow up on day 1, 4 and 7.



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Methotrexate (Systemically – IM, IV, Oral)

Single dose
(recent)

↓
50mg/m² IM

- D1 – β -HCG, CBC, LFT, RFT
- D4 – β -HCG
- D7 – β -HCG, CBC, LFT, RFT

Multiple dose
(in the past)

MTX 1mg/kg IM on D 1,3,5,7

+

Citrovorum 0.1mg/kg on D 2,4,6,8

- Weekly β -HCG till negative titre

- If β -HCG decrease is < 15% D4 – D7 then repeat the MTX dose
- If decline is > 15% then weekly measure β -HCG until level is < 15 IU/L.



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3 SURGICALLY MANAGEMENT

Radical



Salpingectomy

Conservative



-Salpingostomy

-Salpingotomy

**- Segmental
resection**

**-Milking or fimbria
expression**



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Differential Diagnosis

Appendicitis

Threatened Abortion

Ruptured ovarian cyst

PID

Salpingitis

Endometritis

Nephrolithiasis

Ovarian torsion

Intrauterine pregnancy



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Other rare types

1. Multiple Ectopic pregnancy
2. Pregnancy after hysterectomy
3. Primary splenic pregnancy
4. Primary hepatic pregnancy
5. Retroperitoneal pregnancy
6. Diaphragmatic pregnancy

MORTALITY : In general population is 10-15% mainly due to haemorrhage.



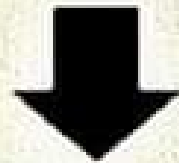
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Complication

- The most common complication is rupture with internal bleeding which may lead to hypovolemic shock. Death from rupture is still the leading cause of death in the first trimester of the pregnancy.

Rupture with internal bleeding



which may lead to hypovolemic shock



Life threatening condition or Death

Conclusion

- Ectopic pregnancy can be diagnosed early (before it ruptures) with recent advances in Immunoassay to detect S-hCG , high resolution USG, and dignostic Laparoscopy.



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- There has been shift in the M/m from ablative surgery to conservative fertility preserving therapy
- Laparotomy should be done when in doubt
- Surgeon should not be ashamed of having negative abdominal exploration, rather to be disgraced for the mistake in diagnosis with the eventual fatality.



Any Questions ?

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thank you