

# Abortion



“No woman has an  
abortion for fun.”

# Objectives

At the end of this lecture the student is expected to know

- a. The definitions of different types of abortions
- b. Laws related to abortion in Sri Lanka
- c. Methods used for criminal abortions
- d. Common complications following a criminal abortion
- e. Diagnosis and investigation of a criminal abortion

# Abortion

Forensic pathological interest in pregnancy revolves almost exclusively around deaths associated with abortion either criminal or legally induced

# Definitions

Abortion- The term abortion is used when the contents of a gravid uterus is expelled before 28 weeks

After this it may be considered as a premature labour. The term miscarriage is an older synonym for abortion

## Induced Abortion

1. Legalized abortion
  - a. Medical purposes (therapeutic abortion)
  - b. Non medical purposes (legal abortions)
2. Illegal abortions- contravening the laws

# Definitions

**Spontaneous abortion-** due to natural causes such as hypertension, pelvic disease, nephritis, uterine abnormalities, malformations of the zygote etc. Most of the time no specific cause is identified

**Therapeutic abortion-** In Sri Lanka it is an abortion carried out in good faith to save the life of the woman as the continuation of the pregnancy will result in the death of the woman

**Criminal Abortion-** In Sri Lanka it is an abortion carried out where the reason for carrying out the abortion is other than to save the life of the woman

# Laws relating to abortions in Sri Lanka

They are described under sections 303 to 307 of the Penal Code

**303-** Whoever **voluntarily** causes a woman with child to miscarry shall, if such miscarriage be not caused in good faith for the purpose of **saving the life of the woman**, be punished with imprisonment of either description for a term which may extend to **three years** or with fine or both; and if the woman be quick with the child shall be punished with imprisonment of either description for a term which may extend to **seven years**, and shall also be liable to fine.

## Laws relating to abortions in Sri Lanka

**304-** whoever commits the offence defined in the last preceding section **without the consent of the woman**, whether the woman is **quick with the child or not**, shall be punished with imprisonment of either description for a term which may extend to **twenty years**, and shall also liable to a fine



## Laws relating to abortions in Sri Lanka

**305-** Whoever with **intent to cause the miscarriage of a woman** with child, does any act which causes the **death of such woman**, shall be punished with imprisonment of either description for a term which may extend to **twenty years**, and shall also liable to a fine.

## Laws relating to abortions in Sri Lanka

**306-** Whoever, before the **birth of any child**, does any act with the intention of thereby preventing the child **being born alive or causing it to die soon after its birth**, and does by such act prevent the child from being born alive, or causes it to die soon after its birth, shall if such act be not caused in good faith for the purpose of saving the life of the mother, be punished with imprisonment of either description for a term which may extend to **ten years** or with fine or with both

## Laws relating to abortions in Sri Lanka

**307-** Whoever, does any act under such circumstances that if he thereby **caused the death** he would be guilty of culpable homicide, and does by such act cause the death of a **quick unborn child**, shall be punished with imprisonment of either description for a term which may extend to ten years and shall also be liable to a fine

# Methods used for criminal abortions and complications

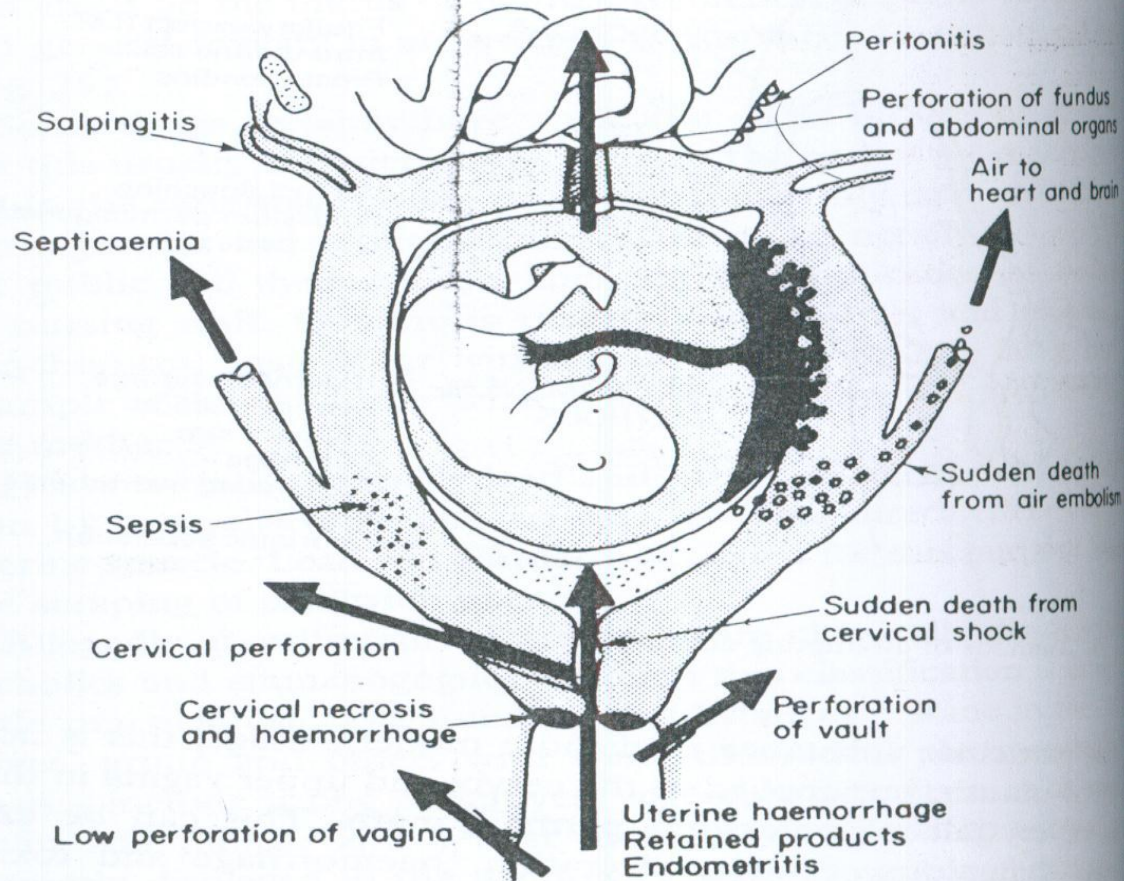
## 1. Instrumental interference

- Usually consists of dilatation of the cervical canal
- From surgical dilators to metallic rods, cycle spokes and castor stumps
- Dangers of instrumentation are bleeding and infection
- Less common danger is cervical shock



# Dangers of criminal abortion

of the Higginson syringe and fluid, sometimes containing toxic



**Fig. 30** Dangers of criminal abortion

# Common complications and deaths

1. Immediate- Vagal inhibition, complications of anaesthesiae
2. Early- Air embolism, Amniotic fluid embolism, Haemorrhage
3. Delayed- shock, Renal failure, infections- due to injuries in the genital tract, uterus, other pelvic viscera, abdominal viscera and tetanus and gangrene

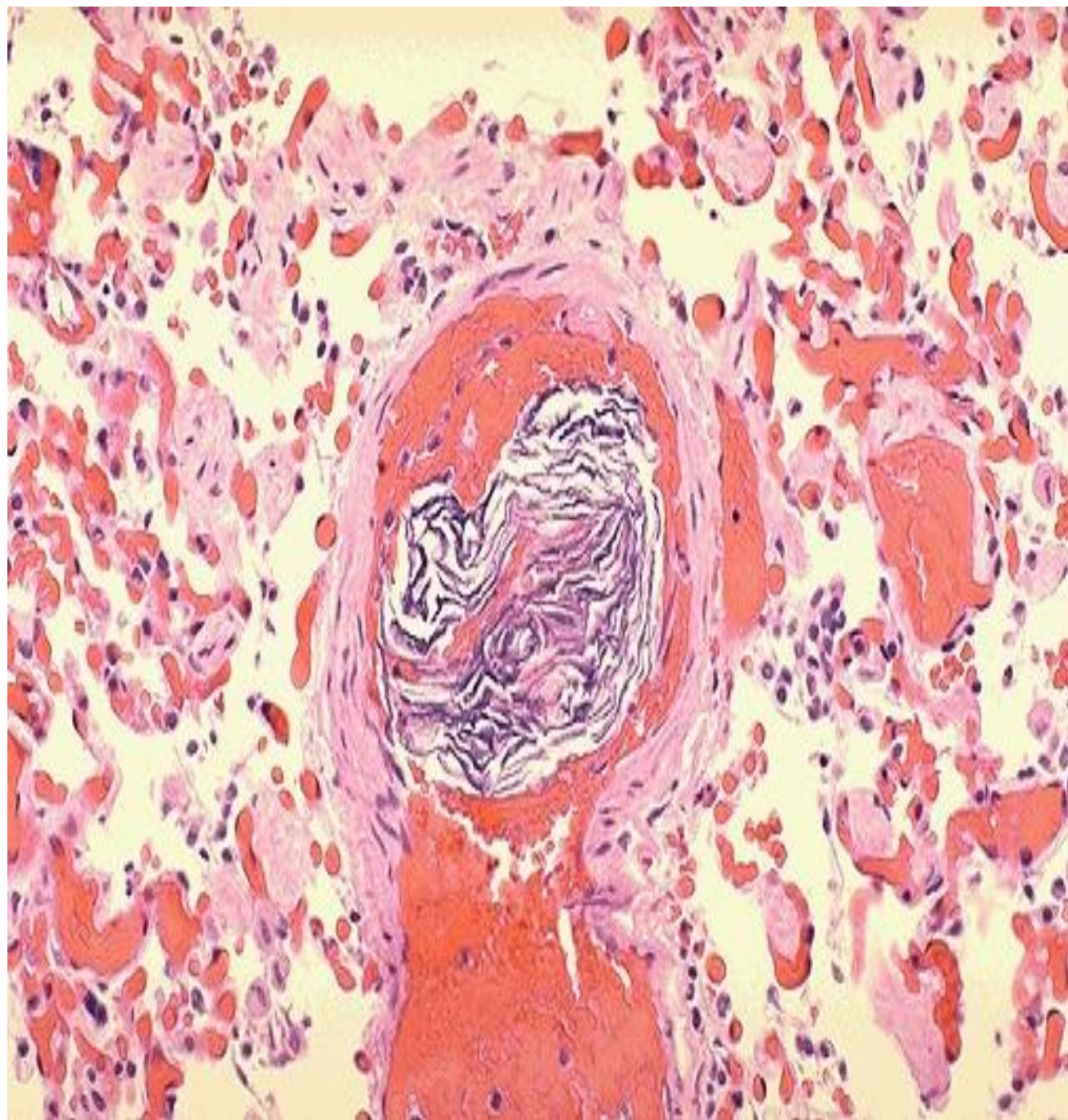
# Amniotic fluid embolism

- Entry of amniotic fluid into the maternal circulation
- Amniotic fluid contains- fetal squames, lanugo, lipoid from the vernix, meconium and cells from chorion and amnion
- The solid elements are usually impacted in the lung capillaries
- The fluid is blamed for the allergic response that may cause such profound death

# Amniotic fluid embolism

- The diagnosis is histological and depends upon identifying the squames detached from the fetal epidermis in the capillaries of the lungs
- These can be seen in the ordinary H& E staining but more visualised in special stains
- Immuno- histochemical techniques have also been used in lung sections to demonstrate human keratin





# Methods of attempting abortion

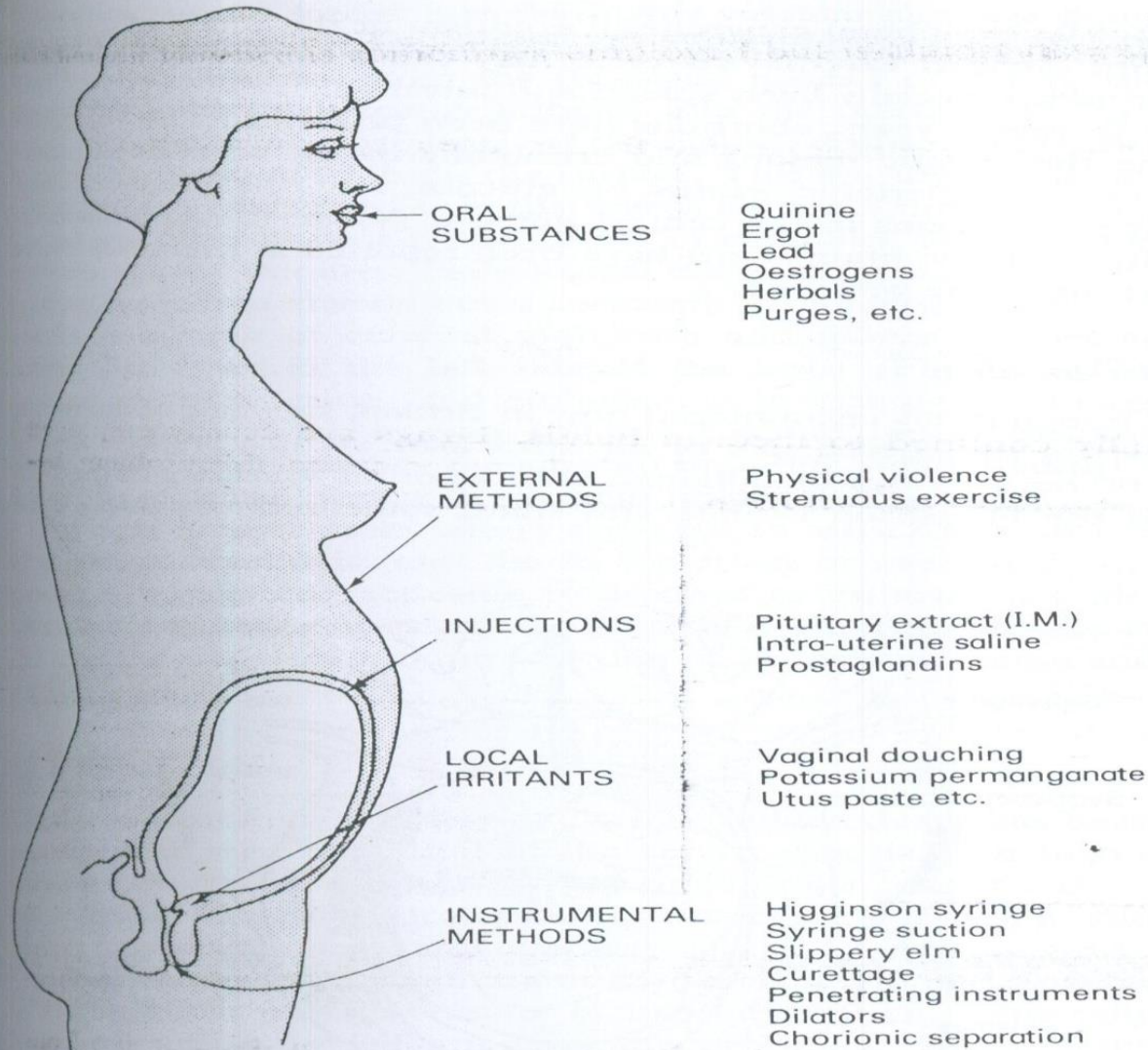


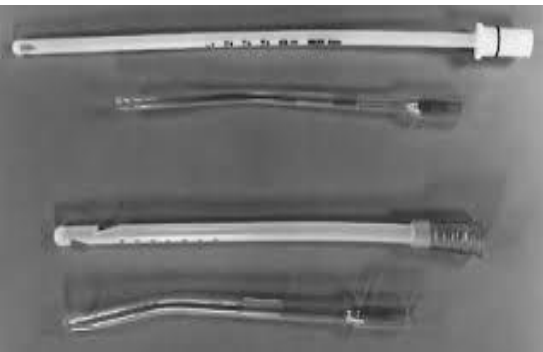
Fig. 29 Methods of attempting abortion



# Methods used for criminal abortions and complications

## 2. Syringe aspiration

- A large syringe (50 ml) attached to a catheter or length of plastic tubing can produce suction within the uterus sufficient to rupture the chorionic sac and precipitate abortion ( Karman cannula: 5 mm diameter)
- Some products of conception may left behind that can form a focus for infection



# Methods used for criminal abortions and complications

## 3. Physical violence

- Punching and kicking of the abdomen were most common
- Violent exercise- skipping, jumping, horse riding

\*Death from rupture of spleen, liver or intestine



# Methods used for criminal abortions and complications

## 4. Suction termination

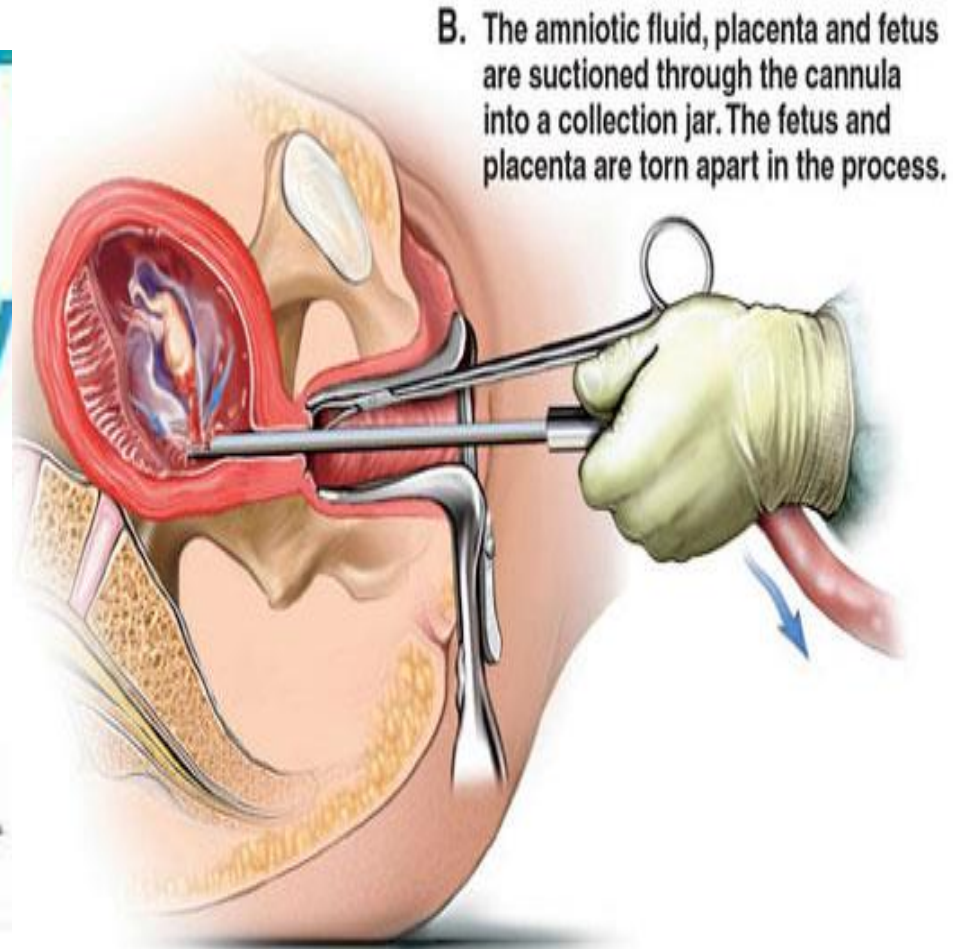
- Useful up to 12 weeks
- A syringe with a metal rod or rigid plastic cannula is introduced to the uterine cavity through the cervix and suction applied through a vacuum source
- Infection, uterine perforation and haemorrhage are possible complications

What does  
**STOP**  
stand for?

Suction  
Termination of  
Pregnancy



  
allacronyms.com



B. The amniotic fluid, placenta and fetus are suctioned through the cannula into a collection jar. The fetus and placenta are torn apart in the process.

# Methods used for criminal abortions and complications

## 5. Drugs and Chemicals

- A wide variety of substances applied locally or taken by mouth
- Pituitrin and prostaglandin. Prostaglandin induce strong uterine contractions
- Ergot, Lead & quinine. They have a contractile effect on the uterine smooth muscle
- Vegetable compounds like raw pine apple and papaw
- Purgatives

# Methods used for criminal abortions and complications

## 6. Higginson's syringe

- The syringe was used to inject fluid into the uterus to separate the membranes from the decidua.
- Death- Air and fluid is pumped into the placental bed and enter the venous circulation causing deaths due to air and fluid embolism





# Methods used for criminal abortions and complications

## 7. Local interference

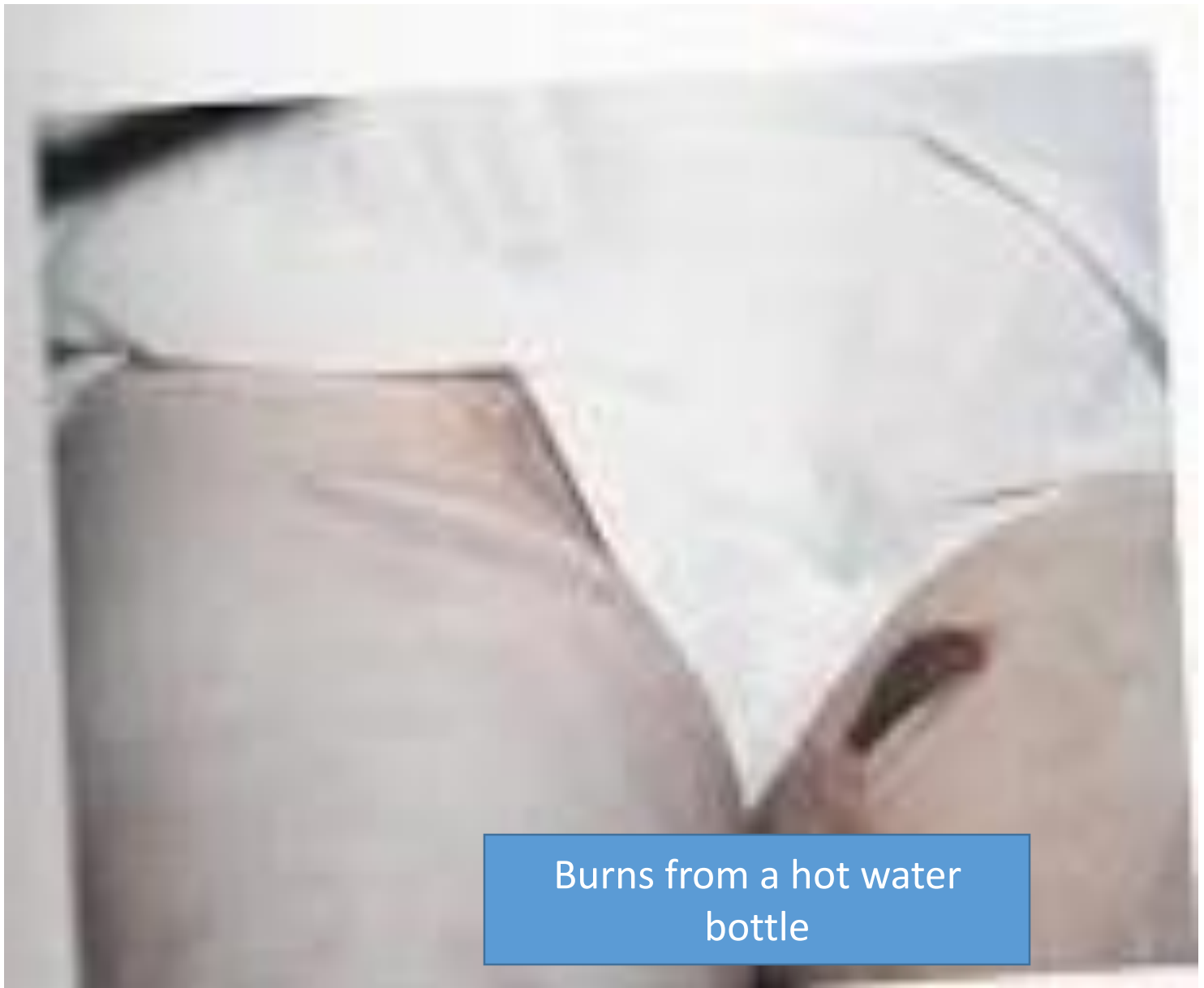
Application of chemicals to the upper vagina, cervix or the inner uterine wall

Eg: Pottasium permanganate- May cause local burns and death by manganate absorption

Utus paste- soap, thymol

- KI





Burns from a hot water  
bottle

# Diagnosis and investigation of a clinical case of suspected criminal abortion

- MLEF/ Magistrate order
- Consent
- History
- External examination- General, Specific
- Genital examination
- Investigations- Urine for HCG, USS abdomen
- Referrals- Gynaecologist, Psychiatrist
- Documentation

## Evidence of abortion in living

Signs of recent delivery- If the examination of person closer to the time of criminal abortion then more signs could be visualized. Also depends on the duration of pregnancy

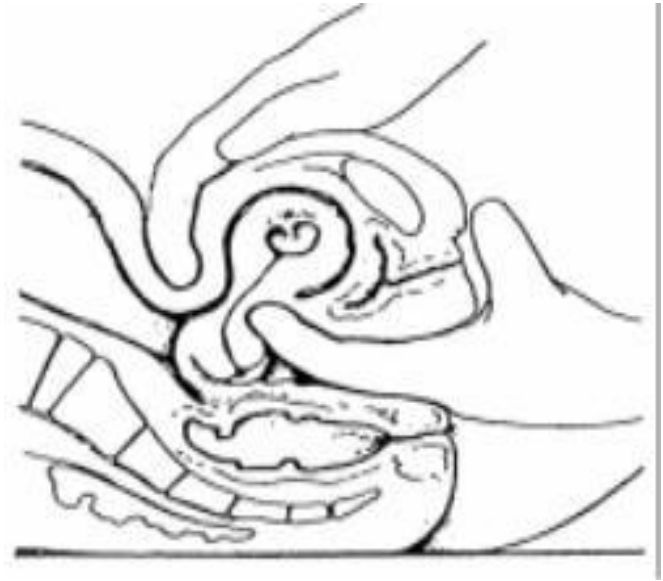
1. PV bleeding
2. Breast changes of pregnancy – more marked in the first pregnancy
3. Enlarged uterus, softened cervix
4. Offensive vaginal discharge, signs of peritonitis

## Proof of recent delivery

- Uterus palpable above the pubis- till 10- 14 days
- Dilatation and laxity of the vaginal orifice
- Discharge of lochia-blood stained for 7 days and brownish for another week
- Swelling and tension of the breasts with expressible milk after 3 days
- Pigmentation of areola
- Striae gravidarum of the abdomen
- Softening and wide patency of the cervix

# Signs of pregnancy

- Amenorrhoea
- Breast tenderness
- Frequency of micturition
- Nausea or vomiting
- Leucorrhoea
- Discoloration of vaginal walls, softening of the cervix, Hegar's sign, breast and nipple changes, radiological evidence of fetal parts, biological urine tests



# Evidence of abortion in living

Examination of genitalia- vaginal lacerations, abrasions, perforations, cervical lacerations, injuries due to instruments on the cervix – it could be surgical or following criminal abortion



# Difficulties in establishing criminal abortion in the living

- History is often less informative
- Lack of cooperation from the patient
- Signs of pregnancy may be minimal in the early stages of pregnancy
- If the criminal abortion performed by skillful person minimal or no complications ( no injuries in the genital tract)
- The place where it is done is cleaned and cleared
- Signs of local interference or instrumentation may get masked by surgical procedures
- Delay in presentation following criminal abortion (findings of pregnancy and recent delivery will disappear with time)



# Duties of a Medical officer

- History, examination, investigation and management of the patient
- Document the injuries and the general condition of the patient
- Collection of specimens – all foreign bodies and products of conception
- Inform the police and the JMO
- If MLEF is issued discharge only after seen by the JMO/MO- Medico legal
- If the condition is bad arrange a dying declaration
- If death takes place request for an inquest

# Duties of a Medical officer

## Ethical aspects

- Obtain informed written consent for surgical procedures and genital examination
- Uphold professional secrecy- No information about a patient's condition should be divulged to others without permission from the patient or his next of kin when the patient is incompetent.

# Diagnosis and investigation of a death following criminal abortion

Important issues to be addressed

1. Establish a pregnancy
2. Period of gestation
3. Abortion taken place or not
4. Whether induced or not
5. If induced the method used
6. Determine the cause of death
7. Whether the cause of death has any causal link with the method used for abortion

# Autopsy in abortion deaths

- History
- Visit to the scene
- Identification
- Preliminary procedures
- Clothing
- General external examination
- Specific external examination
- Internal examination
- Laboratory investigation
- Documentation

# History

- Married/ Unmarried/Pregnant out of wedlock
- Period of Amenorrhea, Abdominal pain, bleeding per vaginum
- Reason for abortion
- Done with consent or not
- Identity of the person and place
- Medicines/Injections given
- Methods used
- Events after abortion- clots, passage of foetal products, fever, discharge

# Visit to the Scene

- Recover medicines and instruments used for the abortion
- Recover trace material such as shaved pubic hair, blood stained cloths and sanitary towels
- Recover foetus or foetal products
- Rarely the body of the dead woman



# Identification

- Usually not a problem
- But there can be instances where a false history or false identification may be provided

## Preliminary procedures

- Photography- signs of pregnancy, criminal intervention, injuries
- X-rays' – Preautopsy radiology of the chest and abdomen for air embolism
- USS scan – diagnosis of pregnancy and abortion
- Trace material- chemicals , foreign bodies



# Clothing

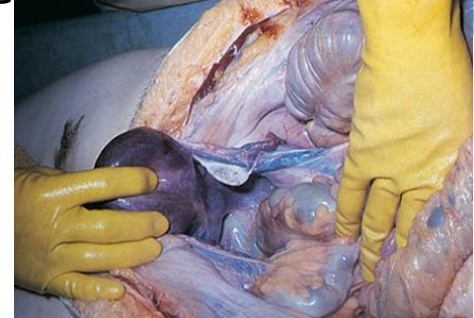
- Identification
- Proof of evidence such as haemorrhage
- Trace evidence

## Specific external examination

- Abnormal colouration of the skin
- Signs and duration of pregnancy
- Signs of injury
- Vagina- signs of current or recent pregnancy, signs of attempted or successful recent abortion, swabs for culture, fluid for chemicals

# Internal examination

- A special pelvic dissection is performed in suspected cases of criminal abortions
- Exclude natural causes for spontaneous abortions- diabetes, heart disease
- Cause of death- Haemorrhage, Septicaemia, renal failure etc
- Examination of the uterus
- Examination of the genital passages



# Examination of the uterus

- Colour, size, texture
- State of the interior- necrosis, sepsis
- If the chorionic sac present – integrity, attachment to the decidua
- Foetus present or not
- Products of conception, placental bed, tubes, ovaries- presence of corpus luteum
- Evidence of abortion – injuries to uterus
- Histological samples



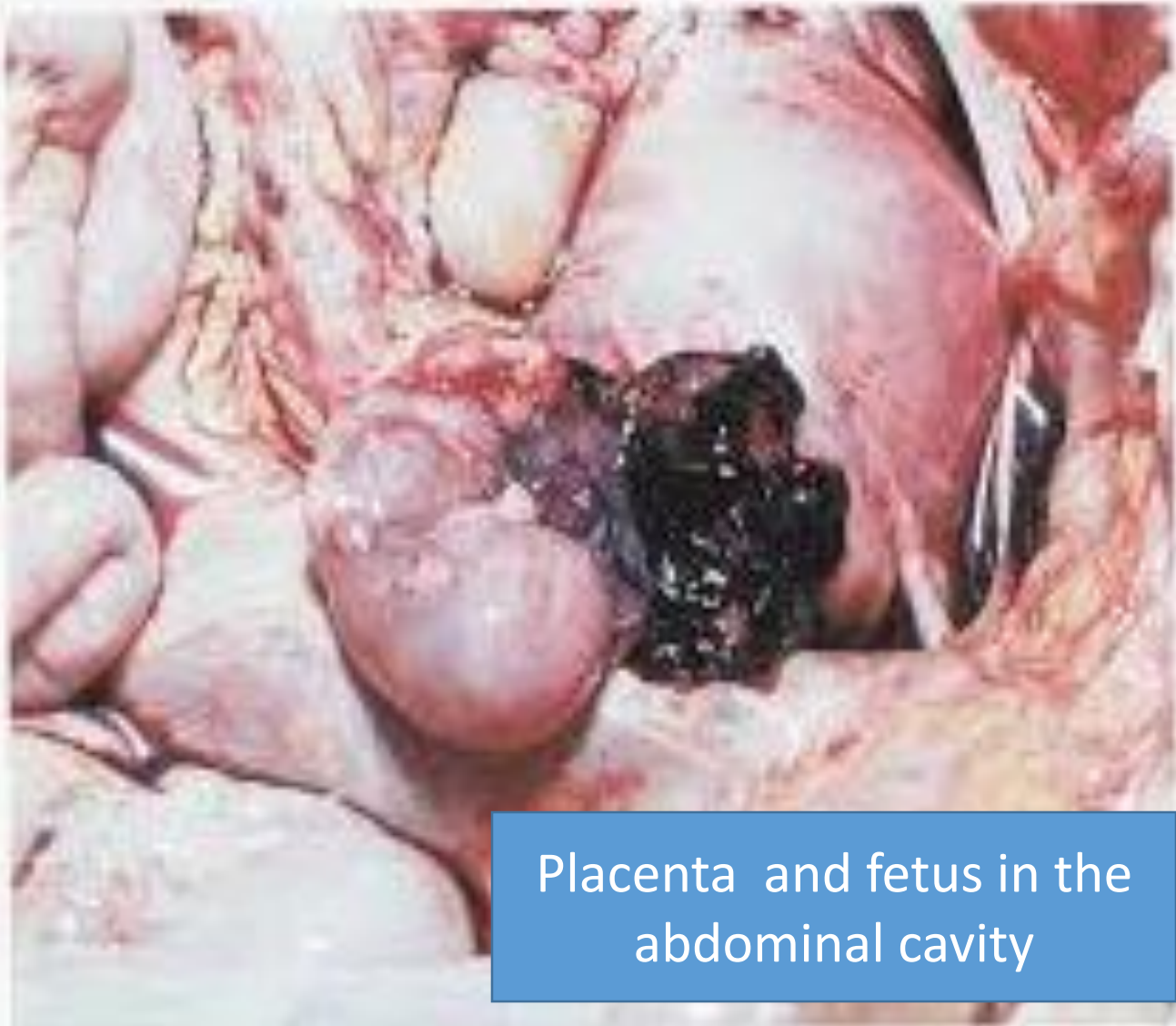
Septic necrotic uterus

# Examination of the genital passages

- Abrasions, bruises, lacerations and any foreign material are noted in the vagina
- Samples kept for chemical and microbiological analysis
- Cervix- instrument marks such as forceps and volsellum teeth
- State of dilatation of the cervical canal



Ruptured tube in ectopic pregnancy



Placenta and fetus in the abdominal cavity



# Special pelvic dissection

- The pelvic organs should be removed enbloc
- The lower end of the abdominal incision is carried around each side of the labia and into the cleft of the buttocks to include the anus.
- The dissection is taken along the superior pubic rami which are carefully sawn through a few centimeters laterally to the symphysis on each side

# Special pelvic dissection

- The central block of bone is removed and the perineal incision dissected deeply
- Cut the peritoneum along the pelvic brim
- The vagina, rectum, anus, uterus, tubes and ovaries can be lifted out in continuity and removed for detailed dissection
- Examine all organs externally before dissection
- The vagina is carefully opened along one side
- Similarly the uterus is also opened carefully along one side

## Laboratory investigations

- Toxicology- chemicals from vagina etc
- Histopathology- diagnosis of pregnancy
- Serology (DNA)- linking the fetus with mother

# Documentation

- Pregnancy and period of gestation
- Evidence of abortion
- Evidence of induced abortion
- Method used
- Sequelae- recovery, complications or death (cause of death)

# Reference

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5. Legal aspects of medical practice. Bernard knight. 5<sup>th</sup> edition

Thank you...

