

Abortion: (aka miscarriage) \Rightarrow Premature expulsion of fetus from mother's womb at any time of pregnancy, before full term of pregnancy is completed (sec. 312 IPC) \Rightarrow **legal definition**

\rightarrow Normal pregnancy = 40 weeks or 280 days (counted from LMP).

\because ovulation occurs 14 days after LMP \Rightarrow actual physical existence of fetus = 266 days

Medical definition \Rightarrow premature expulsion of fetus from the mother's womb before the age of viability (28 weeks)

- After 28 weeks \Rightarrow Stillbirth.

Stages in Fetal Life: PMW = Post-menstrual weeks (from LMP)

Pre-embryo (Developing ovum): 0-5 PMW

Embryo: 6-9 PMW

Fetus: from 10 PMW until delivery

Classification of Abortion:

I] Clinical Classification: CR - MI³S²T²

(1) Complete: expulsion of all products of conception

(2) Incomplete: expulsion of some products of conception

(3) Induced: termination of pregnancy for medical or elective reasons

(4) Inevitable: Vaginal bleeding or rupture of the membranes accompanied by dilation of the cervix

(5) Missed: Undetected death of an embryo/fetus that is not expelled & that causes no bleeding

\downarrow
aka blighted ovum/anembryonic pregnancy / intrauterine embryonic disease

(6) Recurrent/Habitual: ≥ 3 consecutive spontaneous abortions

(7) Septic: serious infection of the uterine contents during or shortly before or after an abortion

(8) Spontaneous: Non-induced abortion

(9) Therapeutic: termination of pregnancy because the woman's life or health is endangered or because the fetus is dead or has malformations incompatible with life

(10) Threatened: Vaginal bleeding occurring before 20 weeks of gestation without cervical dilation, indicating that spontaneous abortion may occur

II] According to Method Induced:

(1) Natural: — spontaneous
— accidental

(2) Artificial: — therapeutic (justifiable)
— criminal

III] According to Time Period:

(1) Early: before 12 weeks of gestation

(2) Late: after 12 weeks of gestation.

Criminal Abortion: unlawful expulsion of products of conception from the uterus, i.e., outside the provisions of MTP Act 1971.

→ It may include:

- abortion by unqualified personnel
- abortion for indications other than those mentioned in the Act.
- abortion after 20 weeks of pregnancy (excluding those conducted to save the life of a woman)

MTP Act 1971 & MTP Amendment Act 2021:

Provisions under MTP Act 1971:

- i) Abortion (except when done to save the life of a woman) was criminalized under sec. 312 IPC (sec. 88 BNS)
- ii) Pregnancy upto 20 weeks can be terminated upon opinions of not less than two registered medical practitioners (RMP)
- iii) MTP can be performed when:
 - continuation of pregnancy is a risk to the life of the woman or could cause grave injury to her physical &/or mental health
 - there is substantial risk that the child, if born, would be seriously handicapped due to physical or mental abnormalities
 - when pregnancy is caused due to rape
 - when pregnancy is caused due to failure of contraceptives.

Provisions under MTP Amendment Act, 2021:

- Increases the upper limit for termination of pregnancy from 20 to 24 weeks for special categories of women (rape survivors, victims of incest & other vulnerable women — differently abled, minors, etc.)

gestational Age	MTP Act 1971	MTP Amendment Act 2021
< 12 weeks	Opinion of 1 doctor	Opinion of 1 doctor
12- 20 weeks	Opinion of 2 doctors	Opinion of 1 doctor
20 - 24 weeks	Prohibited	2 doctors of same category
> 24 weeks	Prohibited	Medical board in case of substantial foetal anomaly

Who can terminate pregnancy:

- 6 months of house surgeonship in G & O
- Post graduate degree or diploma in G & O
- Registered as doctor before 1971 with ≥ 3 years experience in practice of G & O
- 1 year experience in any hospital in the department of G & O.
- Assisted in performing 25 MTP's in a government hospital or recognized training institute.

sec. 312 IPC / sec. 88 BNS: (applicable until 28 weeks of gestation)

i) Abortion can only be done to save the life of a woman

ii) Consent of the woman should be there

iii) Woman herself is punishable under this section, if she performs abortion on herself

→ Punishment:

- Before quickening: 3 years imprisonment + Fine
- After quickening: 7 years imprisonment + Fine

sec. 313 IPC / sec. 89 BNS: (applicable until 28 weeks of gestation)

→ Causing miscarriage without woman's consent

→ Punishment: Imprisonment of 10 years + Fine

sec. 314 IPC / sec. 90 BNS: (applicable until 28 weeks of gestation)

→ Death of a woman caused by an act done with intent to cause miscarriage

→ Punishment:

- If consent of woman ✓: Imprisonment of 10 years + Fine.
- If consent of woman ✗: Life imprisonment + Fine.

sec. 315 IPC / sec. 91 BNS: (typically applicable after 28 weeks of gestation)

→ Act done:

- with intent to prevent child being born alive or
- to cause it to die after birth

→ Punishment: Imprisonment of 10 years + Fine

sec. 316 IPC / sec. 92 BNS:

→ Causing death of quick unborn child by act amounting to culpable homicide

→ Punishment: Imprisonment of 10 years + Fine

Methods of Procuring Criminal Abortion:

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(A) Abortifacient Drugs:

SLI²D

I] Drugs acting directly on uterus:

(1) Ecbolics: drugs that increase uterine contractions, but do not dilate/relax the cervical canal & external os (so fetus cannot be expelled)

Ex: • Aperol (parsley)

• Ergot (most common ecbolic)

• Goldenseal (orange-root)

• Synthetic estrogen preparations

• Nitrobenzol

• Lead

• Pituitary extract (given by injection)

• Quinine

• Savin

• Strychnine

(2) Emmenagogues: drugs which increase the menstrual flow

i) Direct: directly stimulate the uterus (used more often)

• Aloes

• Nutmeg

• Juniper

• Pulsatilla

• KMnO₄

• Saffron

ii) Indirect: correct anemia or disturbed pelvic circulation

• Tonics & hematinics (ex: iron)

II] Irritants of the Genitourinary Tract:

→ Applied locally: produce reflex uterine contractions

→ Taken systemically: produce inflammation of kidneys

• KMnO₄ crystals (100-300 mg solution or tablet)

• Oil of tansy

• Oil of pennyroyal

III] Irritants of the GIT: irritation of colon → hyperemia, uterine contractions

(1) Emetics: Tartar

(2) Saline cathartics: MgSO₄

(3) Strong purgatives:

• Aloe

• Castor oil

• Phenolphthalein

• Rhubarb

• Colocynth

• Podophyllum

• Senna

IV] Local Application of Irritants:

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(1) Corrosives: • Carbolic acid

• Oxalic acid

(2) Irritants

V] Systemic Poisons: sublethal doses for an adult may be lethal to the fetus

(1) Inorganic irritants: salts of:

• Antimony

• Iodine

• Mercury

• Copper

• Lead

(2) Organic irritants:

• methi

• saffron

• Moringa

• unripe fruits (papaya, pineapple, etc.)

③ **Violence**: causes abortion by:

- producing congestion of pelvic organs
- producing haemorrhages between uterus & membranes
- dislocation of placenta

Direct

force applied over lower part of abdomen by:

- kicks & blows
- kneading
- Massage of uterus through abdominal wall
- Tight lacing
- Cupping

Indirect

force applied over lower part of abdomen by:

- carrying / lifting heavy weights
- cycling
- driving over rough roads
- horse riding
- jumping from a height
- running upstairs & downstairs

Cupping: wick is placed over hypogastrium & lighted → mug is placed over it mouth downwards → lighted wick consumes oxygen → partial vacuum created → mug is pulled towards hypogastrium → pulling force separates placenta

(C) Local Methods:

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I] Abortion Pastes:

^{2 3}SACRED - Grams

i) Iodine-containing pastes:

- Uterus paste (soap + myrrh resinoid + KI)
- Interruptin
- Fetex paste

ii) Lead containing pastes: Diachylon

II] Abortion stick: thin wood/bamboo stick about 12-18 cm long

→ one end of the stick has cotton/cloth wrapped → soaked in one or more irritants → introduced into the uterus → retained there till uterine contractions begin

III] Air insufflation: air introduced into uterus through vagina by means of douche tips/pumps/syringes → rarely air dislocates the placenta to cause abortion.

IV] Curettage: cervix is dilated → endometrium is scraped with a curette

V] Dilation of cervix: → expulsion of uterine contents

→ generally used after 8 weeks of gestation.

i) Laminaria tent: cone (tent) or thin rod of dried Laminaria digitata (seaweed) with a white thread attached to one end (for easy removal)

ii) Slippery elm bark

VI] Electricity: Generally, +ve pole over lumbosacral region & -ve pole over cervix (can be done other way round too) → low voltage current is passed → uterine contractions → expulsion of uterine contents

VII] Gum Elastic Bougies/Catheters: cause irritation of the uterus when introduced through cervix

viii] Rupturing of Membranes: introduction of an instrument into uterine cavity (catheter, cannula, glass rod, crochet needle, pen/pencil, screwdriver, etc.) → rupture of membranes → escape of liquor amniī → abortion
 → Complications: • perforation of vaginal/uterine walls
 • infection

ix] Syringe Aspiration: catheter/plastic tubing attached to large syringe → introduced within the uterus → suction applied → negative pressure ruptures chorionic sac → precipitates abortion

x] Syringing: Ordinary enema syringe / Higginson's syringe used → irritant fluid is injected → fluid detaches amniotic sac & placenta from uterine wall → uterine contraction → Abortion
 → Complications: • air embolism
 • toxemia, shock & death
 • fatal haemorrhage, infection
 • vagal inhibition

D) Miscellaneous Methods:

- i) Alternative hip baths in very hot & cold water
- ii) partial abortion by untrained abortionist → threatened abortion → completion of abortion by a trained doctor

Therapeutic Methods of (Safe) Abortion:

- (1) Manual vacuum aspiration
- (2) Dilatation & Suction Curettage (D & C)
- (3) Dilatation & Evacuation
- (4) Other surgical methods — Dilatation & Extraction (D & X)
 - Induction
 - Hysterectomy

Evidence of Criminal Abortion:

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In the living: signs of recent abortion \Rightarrow same as signs of recent delivery

In the dead: PM findings:

→ depends upon:

- mode of abortion practiced
- time elapsed between abortion & death
- time elapsed between death & PM examination

→ In all cases of criminal abortion \Rightarrow female genitalia must be excised out of the body & examined.

I] Abortion By Drugs:

i) Local Examination of Genitals:

- erosions / erosion / inflammation of vulva, vagina, cervix, etc.
- preserve vaginal & vulval washings

ii) GIT:

- signs of congestion, inflammation, irritant poisoning
- if present \Rightarrow preserve GIT contents for chemical analysis

iii) Urinary Tract:

- signs of congestion, inflammation, irritant poisoning
- if present \Rightarrow indicates administration of cathartics, turpentine

II] Instrumental Abortion: AIIMS

i) Air embolism

ii) Infection → vaginal walls may show pus, frank discharge

→ uterine sepsis involves endometrium usually (myometrium, adjacent pelvic organs may be involved)

iii) Injuries: on vagina, cervix, uterus, abdomen

iv) Materials to be preserved:

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- Fetal blood & tissues — for DNA profiling for establishing maternity, paternity
- Fluid from cut surface of lung & pulmonary blood
- Foreign bodies (if recovered)
- Instruments of abortion
- Maternal blood
- Tissues from vagina, uterus, cervical canal, ovaries
- Washings from vagina, cervix, uterine cavity

III] Abortion By Syringing: same as instrumental abortion with some additional findings

- i) Clothes: may be soiled with fluid
- ii) Genital canal: may show corrosion or tissue damage
- iii) Fluid: dark red fluid found between uterine walls & fetal membranes with partial detachment of placenta
- iv) Venous system: uterine, ovarian & pelvic veins & all veins extending from the sides of the uterus to the heart show bubbles of gas & slimy fluid.
 - Veins may be ballooned out
 - Veins may show a beaded appearance

Causes of Death in Criminal Abortion:

I] Immediate Death: occurs within minutes

E-HPV

- i) Embolism (air, amniotic fluid, fat)
- ii) Haemorrhage
- iii) Poisoning (if poison was used to produce abortion)
- iv) Vagal inhibition

II] Delayed Deaths: occurs within 2-3 days

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- i) Local infection
- ii) Peritonitis
- iii) Pyemia
- iv) Septicemia
- v) Tetanus
- vi) Toxemia

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III] Remote Deaths: occurs after weeks R-BJP

- i) Bacterial endocarditis
- ii) Jaundice
- iii) Pulmonary embolism
- iv) Renal failure

MI Aspects of Abortion:

I] Fabricated Abortion: false & malicious claim of an abortion by producing a dead animal fetus.

∴ detailed examination of fetus & DNA profiling is necessary.

II] Trauma & Abortion: if proven \Rightarrow sec. 316 IPC

→ establish a causal relationship between trauma & abortion.

→ criteria suggesting a causal relationship:

- fetus & placenta should be normal before trauma
- factors known to cause abortion should be absent
 - infections (syphilis, toxoplasmosis)
 - exposure to abortifacients
 - repeated w/o abortions without any cause
- uterine abnormalities
- physical attempt to induce abortion

- abortion should occur within 24 hours of trauma
- physical development of fetus & placenta should be compatible with the period of pregnancy at the time of trauma
- there should be an adherent clot or a depression on the placental surface
- injuries to the fetus should be compatible with the time period of trauma

Doctor's Duties in Case of Criminal Abortion:

- (1) History taking
- (2) Consultation with obstetrician
- (3) Treatment
- (4) Maintenance of proper day-to-day records
- (5) Preservation of evidence — all soiled clothes
 - any foreign material collected
- (6) Professional secrecy must be maintained
- (7) Arrange for dying declaration (if patient is serious)
- (8) In case of death \Rightarrow death certificate must not be issued. Body must be sent for PM examination.

Feature	Natural Abortion	Criminal Abortion
Cause	Predisposing disease	Unmarried girl or widow becoming pregnant
Subsequent infection	Rare	Frequent
Marks of violence on abdomen	Not present	Present
Injuries on genital organs	Not present	Injuries may be in vulva, vagina, cervix & uterus
Toxic effects of drugs	Absent	If abortifacient drugs have been used, toxic effects would be seen. Local: erosions & inflammation of vagina & cervix due to local application of irritants & caustics Systemic: specific to abortifacient used.
Foreign bodies in the genital tract	Not present	May be present
Injuries & wounds on fetus	Absent	Present