

def<sup>n</sup> - legal inquiry in to circumstances and cause of sudden, suspicious or unnatural death.

CLASS - ① Police

② coroner

③ magistrate

④ medical examiner

| Police                                                                                                                                                                                                                                                                                                                                                                                                                              | coroner                                                                                                                                                                                                                                                                                                                                                                                                                     | magistrate                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- <del>rank of</del></li> <li>- <del>class</del></li> <li>- police officers inspector, constable</li> <li>- can not issue warrant of arrest</li> <li>- work under control of magistrate</li> <li>- can not order exhumation</li> <li>- can not order doctor to autopsy</li> <li>- can't direct examination of viscera</li> <li>- make report to Inquire witness called Panchanama</li> </ul> | <ul style="list-style-type: none"> <li>- 1<sup>st</sup> class of magistrate</li> <li>- can issue warrant of arrest</li> <li>- work not under any magistrate</li> <li>- can order of exhumation</li> <li>- can order to doctor for autopsy</li> <li>- can direct examination of viscera</li> <li>- sudden death</li> <li>- suicide, homicide death</li> <li>- death occur in treatment</li> <li>- custodial death</li> </ul> | <ul style="list-style-type: none"> <li>- executive magistrate</li> <li>- superior to police</li> <li>- held in</li> <li>- death in police station</li> <li>- due to firing</li> <li>- death in imprisonment</li> <li>- exhumation</li> <li>- down deaths</li> </ul> |

# \* COURTS

def  
type  
procedure  
Record of evidence  
summar  
conduct money  
document  
evidence  
document

- court is an part of judicial department of government who's function is the application of law to Argument brought before it & public administration of justice.

types -

civil

criminal

↓  
supreme court  
high court  
session court  
magistrate court

chief judicial

7

1<sup>st</sup> class

3  
5000

2<sup>nd</sup> class

7  
6000

| Supreme court                                     | High court                                          | session court                                                                    |
|---------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------|
| - locate capital of country                       | - locate capital of state                           | - locate district quarters.                                                      |
| - chief justice appoint by President india        | - appoint by governor of concerned state            | - also appoint by the governor of state                                          |
| - judge retire at 65 years                        | - judge retire at 62 year                           | - it can pass any sentence but death sentence passed after confirm by high court |
| - it is not bound to abide decision of high court | - it is bound to abide by decision of session court |                                                                                  |
| - Power to supervisor all court of india          | - highest tribunal for state                        |                                                                                  |



## magistrate court :-

chief judicial - power imprisonment up to 7 year

1<sup>st</sup> class - 3 year imprisonment & 5000 rupees

2<sup>nd</sup> class - 1 year imprisonment & 1000 rupees fine

### (a) summon

- written document issued by court for penalty or presentness for other inquiry on particular date or day.

- if witness fail to attend he may be fine or imprisoned except urgent reason.

- if witness summoned by two court on same day he should attend higher court first.

### (b) conduct money

- it is fee paid to witness at time of serving the summon to cover expenses for attend court.

- It is given in only civil cases.

\* Record - ① oath

② examiner in chief

③ cross examination

④ re examination

⑤ question by judge

\* evidence : ① documentary

② oral

documentary - Medical certificate

Medico legal report

dying declaration

dying deposition

oral evidence - under oath

- direct evidence

- more imp than documentary

- dying declaration

chemical exam report

expert opinion

\* witness

Person who give evidence in court  
of law.

(a) common

(b) expert.



- defn
- types
- Necessity
- importance
- data for identification

## Identification -

\* defn - determination of individuality of a person or dead body.

\* Types (i) complete - confirmation of personality  
(ii) incomplete - small doubt should be seen of personality.

\* Importance :- living  
dead  
civil case

\* data for identification :

|              |                            |
|--------------|----------------------------|
| (1) Race     | (5) General development    |
| (2) age      | (6) Congenital features    |
| (3) Religion | (7) Acquired Peculiarities |
| (4) sex      |                            |

(1) RACE - define biologic grouping within human species or class, acc to genetically transmit differences.

(a) major -

(b) minor -

- In Train accident, plan crash, unclaimed dead body found, determination on basis of:

Complexion - Indian skin brown, Euro - red

eyes - Indian - dark, Euro - blue, grey

Hair - Indian - black, Euro - brown

Color

Skull



## Sex

\* living - easy identified  
by external organ

\* death person - trouble for  
identify because  
of some organ  
available

living  
\* types :- 3 type

(i) सुनिश्चित - boy - sperm  
girl - ovum

(ii) अतिश्रद्धा - शारीरिक गठन  
आधारित

(iii) अनुमानित - वैज्ञानिक

hair

cloth

habit

depend

③

① श्रद्धा - स्त्री - पुरुष

② श्रद्धा - स्त्री - पुरुष

③ स्त्री - पुरुष - स्त्री

④ कर्णमज्जा - स्त्री - पुरुष

⑤ धर्मराज - स्त्री - पुरुष

Normal  
case

nuclear sex - method of sexing

cell, may be help of determine  
sex in doubtful case, decompose  
body, mutilated body.

doubtful  
case

(i) intersex - both sex are present  
in one person

(a) gonadal dysgenesis - gonad not develop

(b) gonadal dysgenesis - external genitalia  
present but testis or ovaries  
fail to develop at puberty

(c) bisexuality - ovary & testis and external  
genitalia of both sex present

(d) concealed sex - to avoid detection  
criminal may try to conceal  
sex by changing dress etc

\* in dead person

(i) decomposed body

- dead sex determination  
of individual should based  
on specific sex organ if  
body is decomposed highly  
probable. evidence is useful.

(ii) From skeletal remains

- For forensic pathologist it  
seldom poses problem to  
determine sex from skeletal  
remain.

- it depend upon number of  
bone available in skull

- pelvis or prostate growth.  
and, remain of hair,  
tattoo, breast etc are  
also useful to detect sex.

\* medico legal aspect of sex

(i) marriage

(ii) legitimacy

(iii) divorce

(iv) impotence

(v) Rape

|      | स्त्री | पुरुष |
|------|--------|-------|
| bone | small  | large |

|      | स्त्री | पुरुष |
|------|--------|-------|
| bone | small  | large |

|      | स्त्री | पुरुष |
|------|--------|-------|
| bone | small  | large |

|       | स्त्री | पुरुष |
|-------|--------|-------|
| chest | small  | large |

|        | स्त्री | पुरुष |
|--------|--------|-------|
| pelvis | wide   | deep  |



② Religion: max. ratio hindu & muslim  
- in born religion some difference  
by help of that determination

③ sex - (i) genital - external  
internal  
(ii) sexual organ -

④ normal case in living - most certain (Pemis, etc)  
- High Probable (Physical development)

⑤ in dead body - decomposed body  
- skeletal

④ Age -

Age :-

- identification of Age classified in to two broad groups

(A) Intrauterine life

(B) extra uterine life

(A) Intrauterine life :-

~~features of fetus can assessed by studying development~~  
~~morphology, ossification~~

- In Intrauterine age of fetus assessed by  
(i) developing morphology  
(ii) appear of ossification bone  
(iii) germination of teeth

(8) Extra evidence life :- age of an individual up to 25 years can be determined by.

- (i) Teeth
- (ii) ossification bone
- (iii) Height & weight
- (iv) Various particles
- (v) medicolegal importance

(i) Teeth - Temporary - 20  
Permanent - 32 (6-9 years)

important - identification of body

help in estimation of age

study in crime investigation

(ii) Ossification bone - other evidence of age is obtained by X-ray picture of long bone, elbow joint, knee joint, ankle joint.

= examine following bones -  
elbow joint  
knee joint  
long bones  
sternum  
Hyoid bone  
skull, sacrum

(iii) Height & weight :-

| <u>Height</u>       | <u>Weight</u>               |
|---------------------|-----------------------------|
| at birth - 40-50 cm | at birth - 2.5 - 3 kg       |
| 6 month - 60 cm     | Per month - 0.5 kg increase |
| 1 year - 68 cm      |                             |
| 4 year - 90-100 cm  |                             |



(IV) Various particles & following things studied

- birth record

+ change occur at puberty

- changes due to old age

(V) medico legal importance

(a) Criminal responsibility - 15-17 years - if damage by child not responsible

- 18-21 years - partially responsible

- 22-25 years - fully responsible

- 26-30 years - responsible for crime

- 31-40 years - responsible for crime

- 41-50 years - responsible for crime

- 51-60 years - responsible for crime

- 61-70 years - responsible for crime

- 71-80 years - responsible for crime

- 81-90 years - responsible for crime

- 91-100 years - responsible for crime

(b) kidnapping - under age of boy 16 and girl 18 any kidnapping ~~case~~ occurs that person punishable

(c) rape - person below 16 years girl

(d) employment - below 14-15 years children

(e) marriage - boy - 21 girl - 18 year

(f) Attain maturity -

(g) general development - height  
weight  
muscular develop

(h) Congenital features - (A) Personal appearance

(B) Anthropometry - HC, length, CC, breadth

(C) Dactylography

⑦ Acquired peculiarities - (A) occupational mark  
(B) tattoo mark

(C) scar

(A) Occupational - Temporary  
Permanent

(B) Tattoo mark - design imprinted in  
skin by puncturing with needle  
dipped in colour, e.g. - carbon

- on dermis layer - Permanent mark  
epidermis - 10 years mark

- after decomposed body mark are seen

- mark are removed by surgically, electro-  
lysis.

\* medico legal - identification person

- Race

- occupation

- social status

(C) Scars - fibrous tissue covered with epithelium  
& result from damage to dermis  
- sweat gland, elastic tissue, pigment  
are absent.  
- Their, number, size, shape, fixed or free  
smooth, etc should noted



# death

- definition
- stage
- types
- mode of death

- Study of medicolegal death is known as thanatology (thanato - death, logy - science)

\* def<sup>n</sup> - Ayur - dissociation of body, soul & mind called death

modern - cessation of heart, respiratory and brain function is death

- conservative medical definition is brain death, means permanent cessation of brain & its type are

- (A) cerebral death -
- (B) stem death
- (C) whole brain death

\* TYPES :- character - (i) कालम  
(ii) अकालम

(i) कालम - natural death

- after normal limit of age function should stop naturally called कालम.

(ii) अकालम - like vehicle similarly life span comes to an end due to over extension

diet not in accordance, irregular meals, complicated body posture over sexual activity, impelled urges, Poison wind and fire, injury such death called Akevala.

modern - natural - pathological change make continuation of life incompatible.

unnatural - caused by act of another person or agent or himself.

### \* Stage of death :

① somatic - due to complete & irreversible cessation of heart, lung & brain function known somatic.

② molecular - death of cell or tissue is molecular death.

- it occurs after 1-2 hours of somatic death because of some cells are live after stop functioning.



## \* modes of death

- 3 types

① Coma:- failure of function of brain leads to death.

- due to paralysis of vital centre in to body

cause - effusion of blood in brain

- opium, cocaine drug use

- metabolic disorder

- embolism, thrombosis

features - loss of all reflex

- slowly as result of depression of vital centres

- cessation of respiration & heart beat

Autopsy - injury & brain diseases not

② syncope:- called fainting

- due to sudden stoppage of action of heart (cause anaemia)

causes - Anaemia due to excess haemorrhage

- poisoning

- Vasovagal shock due to falling blood pressure, rapid cerebral anaemia

- \* features - face will pale  
- heart beat faster  
but weak  
- respiration high but shallow  
- unconscious eyes

- \* Autopsy - heart contracted  
- chamber are empty  
- lung, brain, abdominal  
organ are pale colour



③ Asphyxia: less oxygen supply to blood  
- failure of respiration pathologic  
mechanically or accidentally

(i) mechanically - closure of air passage  
by any substance

(ii) pathologically - transfer of oxygen to  
lungs is prevented by diseases

(iii) environmentally - insufficient oxygen in environment

(iv) traumatically - due to pulmonary embolism

### features -

inspiratory dyspnoea - B.P. rise  
P.R. rise  
heaviness head  
mild cyanosis

expiratory dyspnoea - face deeply congested  
- B.P. rise  
- swollen of ~~trachea~~ veins in neck  
- convulsion

exhaustion - pupil dilation  
- full B.P.  
- Respiratory paralysis

Autopsy - cardiac dilation  
- petechial hemorrhage  
- cyanosis

## \* sign of death

① immediate sign

② early sign

③ late sign

① immediate sign

- (a) stoppage circulation
- (b) stoppage respiration
- (c) insensibility

② early sign

- (a) loss elasticity skin
- (b) rigor mortis
- (c) postmortem lividity
- (d) change in eye
- (e) cooling of body

③ late sign

- putrefication
- adipocere
- mummification

18



## \* Postmortem lividity

- bluish discolouration of body after death due to capillovenous distention
- also called hypostasis postmortem
- Normal person - 1 hour  
anaemic person - 1-4 hour  
circulatory failure - 6 hour
- extent lividity depend up on the fluidity of blood it is intense in asphyxia and less in anaemic person
- it may not be visible - in dark complexion person
  - severe anaemic person
- medico legal
  - sign of death
  - useful in determining time of death

## \* Rigor mortis :- Rigor - rigidity mortis - death

def<sup>n</sup>. it is condition characterized by stiffening, shortening & opacity of muscles which is followed by primary relaxation.

mechanism - voluntary muscle containing bundle of long fibres

- muscle fibre contain myofibril
- myofibril madup with two protein filament myosin & actin
- In relaxation actin filament intriguted with myocin and during contraction both are come closer and for separation ATP is required.
- after death ATP is convert in to actin and myocin in to dehydrated

### \* appearance order

- First seen in involuntary muscle
- after in voluntary muscle - eyelids  
neck  
lower jaw and  
pass upward face muscle and chest, upper limb  
etc
- [Completely develop. rigor mortis <sup>load</sup> body  
become stiff

### \* time of onset :

- in india - 1-2 hrs after death
- winter - 24-48 hrs
- summer - 18-36 hrs
- adult - slow
- child - rapid
- old - rapid
- Violent death - early
- Asphyxia death - delay
- Cold - delay
- heat - rapid



## \* putrefication:

- The incident brought about by action of enzyme derived from body itself.
- it may also brought about by bacteria ~~present~~ <sup>present</sup> in intestine of living individuals
- after death this bacteria spread all over body by help of blood stream within short period, bacteria are B coli, streptococcus

changes - (i) external  
                  (ii) internal

(i) external change - colour change

- gases
- pressure effect by gases
- skin, hair & wounds
- skeletonisation

(ii) internal - larynx, brain, intestine, spleen, omentum, liver, bladder, kidney, diaphragm, blood vessel, pancreas.

## \* water putrefication

### \* factor increase rate of putrefication

external - Air

- Temp.
- wet & dry
- manner of burial
- ~~etc~~

Internal - Age

- sex
- condition of body

\* Adipocere - Adipo-વસા come - માંસ

- also called saponification
- માંસ ઉત્પન્ન during putrefaction
- વસા ~~મિશ્ર~~ <sup>muscle</sup> → acid
- વસા ~~મિશ્ર~~ <sup>સ્ત્રોત</sup> → વસા મગ્ન રૂપ ને પરિવર્તિત થીન
- વસા - કઠમલ, ચિકના, ગંધા, શ્વેત વર્ણ
- water rapid increase વસા and putrefaction

medico legal - Time since death can know

- it may be indicative of body
- help to identify
- cause of death known



# Autopsy

| \* def<sup>n</sup> - Auto - Self opis-view

- means to see for one self. A medico legal Autopsy or postmortem is special examination of ~~dead~~ dead body carried by under law of state.

| \* TYPES :-

① Pathological - it done to conclude the cause of death in case due to pathological reason

② Anatomical - done by medical student to enhance knowledge

③ medico legal - done in case of death which are sudden, unnatural & suspicious.

| \* Objective Autopsy :-

- Find cause of death
- circumstance of death
- time since death
- manner of death
- viability in birth.

### \* Principle 2-

- examination must careful
- Record should available to public
- procedure should carried out with efficiency & dignity
- medical men should be neat

### \* Rules 2-

- Performed by medical practitioner
- should be conduct in mortuary
- official order from police officer & magistrate
- Should be done without delay
- should done in day light only
- detail should enter which are examination
- video recording of all procedure
- visit to scene of crime

### \* Requirement 2- Autopsy table

- instrument
- other material
- glassware
- chemicals

\* Precaution :- Authorization  
identification  
history of case  
examination  
Verification of Injuric note  
by police

\* Procedure :-

(i) external examination.

- saliva swab should taken
- scraping should taken before remove cloth
- head hair should examined
- Height & weight of body with remark general state of nutrition
- colour of skin, sex, age, race, mark, skin diseases
- vaginal swab
- presence of diseases sign
- skull & face
- eye should examined
- Fracture
- Abdominal & external genitalia should examined



## 7) Internal examination -

- All major 3 cavities such as skull  
thorax, abdomen should be examined

- 3 incision

(a) I shape

(b) Y shape

(c) V shape

(a) I shape - from thyroid cartilage to  
pubic symphysis incision should  
be made

- safe umbilical cord

- For know the fracture of  
thyroid or hanging or any  
strangulation.

(b) Y shape - extended from the both side  
of axilla to clavicle extend  
down below breast across the  
xiphoid process, then from  
xiphoid process to downward  
up to pubic symphysis.

- know the full examined  
jaw

(c) V shape - ~~cut~~ from both side to below  
manubrium sterni then downward  
up to pubic symphysis

## \* laboratory procedure

- histology of each organ
- Bacteriologic examination
- examination of urine & feces
- Vaginal & anal swab
- urethral discharge

## \* Technique for collect sample 2,

- (i) blood .
- (ii) CSF
- (iii) Bone
- (iv) bone-marrow
- (v) hair
- (vi) muscles.

## \* Autopsy report :

- (a) Preamble - Name , age , sex ,  
place of examination  
time of arrival
- (b) body of report - complete discription.
- (c) conclusion

## \* disposal of death :

- cremation
- burial
- incineration
- Tower silence

# Hanging

\* def<sup>n</sup> - Asphyxial death caused by suspension of body by ligature tied on neck constricting weight of body.

\* Types :-

- ① Complete - feet do not touch the ground
- ② Incomplete - feet, knee, leg touch the ground
- ③ Typical - knot seen exactly back and opposite from head fullen side
- ④ Atypical - knot is seen sideward

\* Cause - fracture of cervical vertebrae  
- Asphyxia  
- pressure on large arteries of neck

\* Fatal period - 5-6 minute

\* Post mortem - tongue protrude out  
- bleeding from nose, ear  
- eye dilation  
- eye protrude out  
- colour change of skin  
- fracture of hyoid bone  
- ligature mark should seen  
- head fall down opposite of knot



medico legal :- Accidental  
homicidal  
suicidal.

## Strangulation

\* def<sup>n</sup> :- mechanical form of asphyxia  
caused from constriction of neck  
by force without suspend body

\* Types :- Proper strangulation - ligature  
Throttling - compress neck w/ hand  
Mugging - compress throat w/ foot, knee  
Bansudola - compress throat w/ bamboo  
Garroting - attack from behind

\* Symptoms - immediate insensibility & death  
- partial compress - face cyanosed  
- hand get clenched  
- convulsion  
- bleeding from mouth,  
ear, nose.

\* Cause of death - Apoplexy - fracture cervical vertebrae  
- Vagal inhibition  
- Apoplexy

\* Postmortem - ① external appearance - Acc to cause  
Acc to ligature  
② internal appearance - fracture cartilage  
- injury to deep tissue  
- damage neck  
muscles

\* medico legal - suicidal - uncommon  
Homicidal - common

## Suffocation

def<sup>n</sup> - form of asphyxia cause by obstruct  
to passing of air in to lung causes  
other than compression or drowning

\* Types - (A) smothering - suicidal - uncommon  
Accidental - Infant  
Homicidal - Common

- cause by closing external  
respiratory orifice done by cloth  
hand, block by mouth with  
foreign substance

(B) gagging - cause by closing mouth and  
nose by cloth with tied around  
head by force cloth in to mouth

(C) overlying - cause by compression of chest  
- when mother rolls on infant  
during sleep

(D) burking - after giving alcohol on a  
assailant sat on chest and  
close nose & mouth with hand

- during meal  
- vomit  
- rubber, cloth  
- button

(E) choking - cause by obstruct air passage

(F) traumatic - chest is compr. grossly  
by powerful force & death are  
always accidental

# drowning

def<sup>n</sup> - cause by entry of water or other fluid in to respiratory track due to submersion.

## \* TYPES -

Immersion  
base

- ① Complete - whole body is submerge in fluid
- ② Partial - only mouth and nostril is submerged in fluid

base on  
Pathological  
changes

- ③ Typical - obstruction of air passage (wet) by inhalation of water

- ④ Atypical - Very little or no inhalation (dry) of water in air passage

- ⑤ secondary drowning - This is mainly due to infection from contaminants of inhaled water.

\* stage - person fall in water & sink down to depth

- some case immediate death other case person rise up with help of movement of limb that time swallow major quantity of water.

- more air is replace ~~with~~ <sup>by</sup> the water

- due to gravity person again sink down

- Process of rising & sinking goes on for sever turn



\* cause - Asphyxia due to obstruct passage

- pulmonary edema in sea water
- hypothermia that is chilling by immersion
- injury to vital organ

\* Fetal period - within 5 min after submersion

- quickly in fresh water
- slowly in salt water

\* Post mortem - sign of asphyxia quickly

- because of wet and cold exposure skin become clammy & pale

Internal - change in respiratory tract

- bio chemical change in blood
- presence & character of water in it
- presence of diatoms in tissue

\* medico legal - suicidal - common in women

- Homicidal - uncommon case of infant except

- Accidental - Tipping of boat in water

- floating body after 24 hours

- Adipocere take place 5-15 days

## STARVATION

\* def<sup>n</sup> : It occurs from stoppage of food or from giving unsuitable food

\* TYPES - ① Acute - This starvation result from sudden & complete stoppage of food

② Chronic - This starvation result from gradual deficient supply of food

\* cause of starvation :- Famine (war, political strife)  
- poverty (poor)  
- excess fasting  
- neglected by parent (neglect)  
- with bad food  
- voluntary refusal food (anorexia).

\* sign & symptoms :-

| Acute                                                                                                                                                                                                                                                                                                                | chronic                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>- feeling hunger last for 30-48 hrs</li><li>- epigastric pain</li><li>- after 4-5 day emaciation</li><li>- Pupil dilute, dryness lip, dirty tongue, cracked lip</li><li>- skin is dry, rough, wrinkled</li><li>- extreme emaciation</li><li>- Abdomen become concave</li></ul> | <ul style="list-style-type: none"><li>- dry or wet picture</li><li>- person having diseases due to low immunity</li><li>- edema seen all over body</li><li>- pleural effusion may be seen</li><li>- mental &amp; physical lethargy</li><li>- hypothermia</li></ul> |

- loss of muscle power
- Abnormal Temperature
- Urine is scanty

- blood sugar comes lowered.

\* Cause of death :- Absence of nutrition

- circulatory failure
- recurrent infection

\* Fatal Period - death occurs in 10-12 day if water & food both are stop

- if only food stop death occurs within 6-8 week.



on basis of age - child, old - death very quick  
women - longer period  
fatty people - survive better

\* Post mortem change :- emaciation of all organ

- muscles are emaciated
- fat disappear completely from all over body
- in child ricket & dental defect
- ulceration in bowel
- anaemia, blood volume reduce
- urinary bladder empty

\* medico legal :

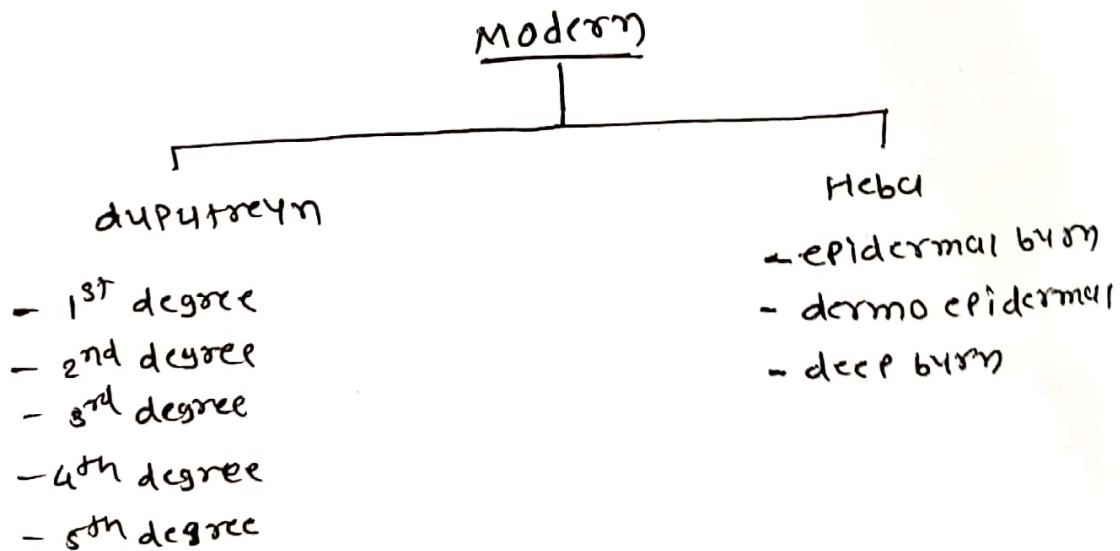
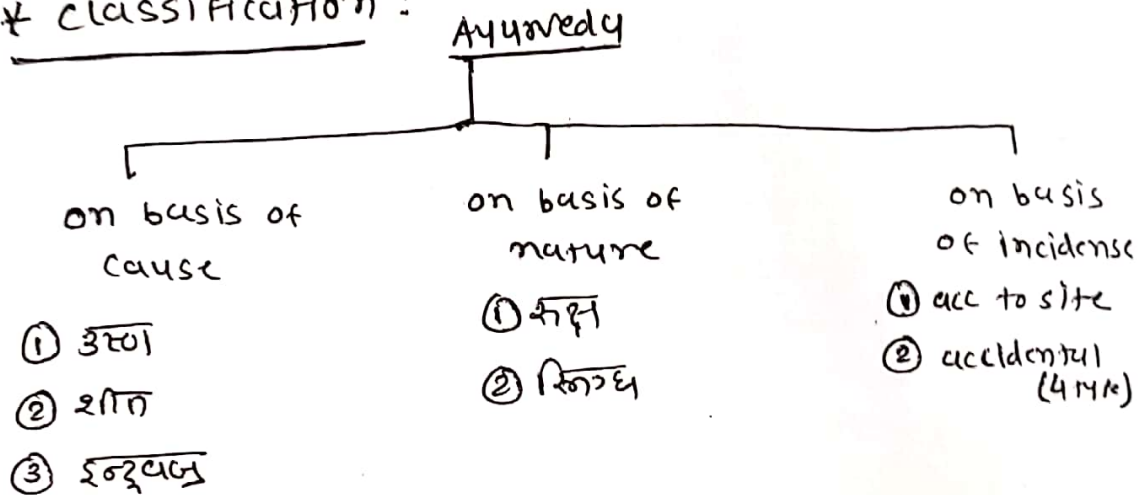
- suicidal - some time voluntary
- homicidal - in helpless person
- accidental - femine, landslide work

# BURNS (एपेगोल)

\* def<sup>n</sup> :- Ayurvedu - dagdhavarnu means wound cause by fire or fire related things

Modern - burn is injury caused by heat applied to external surface of body.

## \* Classification :



~~1<sup>st</sup> - redness produce, superficial inflammation produced, epidermis only, disappear 2-3 days~~

~~2<sup>nd</sup> - blister & redness produce, heal in 6-7 days~~

~~Very painful~~

| degree                 | layer affect                                | pain          | heal time                 |
|------------------------|---------------------------------------------|---------------|---------------------------|
| 1 <sup>st</sup> degree | superficial epidermis<br>only redness seen  | painful       | 2-3 days                  |
| 2 <sup>nd</sup> degree | totally epidermis<br>blister & redness seen | Very painful  | 6-7 days                  |
| 3 <sup>rd</sup> degree | totally epidermis<br>dermis involved        | quite painful |                           |
| 4 <sup>th</sup> degree | whole skin destroy                          | not painful   | Slough after<br>some days |
| 5 <sup>th</sup> degree | dermis totally destroy<br>muscle are involv |               |                           |
| 6 <sup>th</sup> degree | Bones are<br>affect                         |               |                           |



AL  
GERI

11/10/19

asphyxiation  
injuries

exhaustion  
septicemia

- 24 hours

- red area

- swollen fuck

- tongue protruded

- leg are flexed

- stiffening

- chocolate cowboy

- Skull bone structure

- stomach & esophagus red

- duodenum ulcer

# Mechanical Injuries

- \* def<sup>n</sup> - destruction of any organ or part of body and also describe that presence of scar at the site of the wound after healing called vrung
- damage of tissue by heat, cold, chemical, electricity, radiation in addition to mechanical force

## \* class :

Ayurveda - (i) भिज  
(ii) आग्नितुल

modern - Mechanical - Abrasion  
- Bruise  
- laceration  
- Incised  
- stab wound  
- Firearm

Chemical - acid  
alkalis

Thermal - heat - heat syncope  
- cold - Frost bite

Other - electricity, lightning, X-ray.

Acc severity - (i) Simple  
(ii) grievous  
(iii) dangerous

## ① Abrasion

- destruction superficial layer of skin called Abrasion

| <u>Cause</u>  | <u>Types</u> | <u>Medico legal</u>   |
|---------------|--------------|-----------------------|
| - blow        | scrutch      | - injury nature       |
| - Fall        | graze        | - identification      |
| - finger nail | pressure     | - cause of injury     |
| - Thrown      | Impact       | - direction of injury |
| - tooth bite  |              | - time of injury      |

## ② Bruises

- effusion of blood in to tissue without loss of skin caused by blunt force

| <u>Character</u>     | <u>factor</u>               | <u>Appearance</u> |
|----------------------|-----------------------------|-------------------|
| size - depend tissue | age - child, old easily     | dark red          |
| colour - bruise      | sex - men less              | take seven hour   |
| Pattern - round      | natural diseases - Leukemia |                   |

### medico legal

- indicate weapon
- degree of violence
- manner of assault
- homicidal
- suicidal
- accidental

## ③ Incised

- Clean cut through tissue length is more than depth

| <u>Cause</u>               | <u>character</u> | <u>Age</u>        | <u>medico legal</u>   |
|----------------------------|------------------|-------------------|-----------------------|
| heavy sharp cutting weapon | edge - direction | 12 hrs - red      | - nature of weapon    |
|                            | width            | 24 - vascularised | - direction of force  |
|                            | length           | 2-3               | - age of injury       |
|                            | Shape            |                   | - suicidal, homicidal |
|                            | hemorrhage       |                   | accidental            |



#### ④ Stab wound

- Puncture wound penetrate skin and deeper tissue by sharp point object.

| <u>Cause</u> | <u>Character</u>            | <u>Cause of death</u> |
|--------------|-----------------------------|-----------------------|
| knife        | length - less than width    | - Inj. vital organ    |
| arrow        | depth - greater than length | - haemorrhage         |
| needle       | margin - clear.             | - Infection           |
|              | Shape - round, coniform     |                       |
|              | direction -                 |                       |

#### medico legal

- shape of wound
- depth of wound
- direction & dimension of wound
- position, number direction of wound
- homicidal
- suicidal
- accidental

#### ⑤ lacerations

- skin & subcutaneous tissue are tear due to blunt force to body, ~~wound~~ also called rupture

#### TYPE

Split - crush skin & two hard object

Stretch - fixed skin

Avulsion - compress by weight

cut laceration - heavy sharp

#### Character

- Margin irregular
- hair crushed
- depth varies
- foreign body found

#### medico legal

- cause of injury
- age of injury
- suicidal
- accidental
- homicidal

#### defence wound

## \* Introduction

- The science of dealing with study of fire arm and ammunition.
- include study of discharging fire arm, projectile motion, factor affected firing.

## \* subdivision - ① Proximal ballistics

- ② Intermediate ballistics
- ③ Terminal wound

- ① Proximal ballistics -
- ① Fire arm
  - ② Firing principle
  - ③ mechanism of discharge
  - ④ cartridge
  - ⑤ class. of fire arm
  - ⑥

- ② Intermediate ballistics - forensic pathologist specialised in this field

- ③ Terminal wound -
- ① factor influence wound
  - ② wound cause by fire arm
  - ③ wound by shotgun
  - ④ wound by rifling
  - ⑤ Autopsy
  - ⑥ medicolegal imp.

# ① proximal ballistics

②

① Fire arm - a weapon from which a shot is discharge by gunpowder under air pressure with sufficient velocity.

- include (i) barrel
- (ii) Action
- (iii) grip.

(i) barrel - hollow steel tube various in rifles or shotgun

- in shotgun called gauge
- rifle " calibre

- front of barrel always open called muzzle
- back of barrel called breech end

(ii) Action - mechanism of gun called

- include breech block - for enter cartridge
- Trigger - operated by finger
- Firing pin - hit cartridge after trigger

(iii) grip - fire arm part which gripped in hand

- in long barrel gun it is elongated

② Firing Principle :-

- (i) Loaded
- (ii) cocked (ready for fire)
- (iii) fired (pull trigger)

③ mechanism of discharge :-

- after pull trigger release firing pin and forcefully attack on explosive mixture (cartridge)



- then produce the hot gas which increase pressure on cartridge than cartridge recoils from the muzzles of firearm,

(d) Cartridge : one unit of ammunition

(i) Part

- consist - cartridge case  
propellant charge  
projectile
- cartridge case - outer shell or covering of cartridge it provide protection
  - contain potassium, lead, barium etc
- propellant charge - black or smokeless powder in form of grains
- projectile - object propelled (thrown) by force of rapidly burning gases.

(ii) Type of cartridge - shotgun - 6-8 cm  
rifles - 3 cm

(e) Class of firearm - (i) smooth bore  
(ii) Rifled firearm  
(iii) Air pistol

(i) smooth bore → single barrel - semi automatic  
- double barrel - automatic

→ gun length - 40-46 inch  
barrel length - 24-30 inch

→ diameter is 12 cm, 16 cm, 20 cm.

→ uses - range is 30-50 yards  
- muzzle velocity - 1000 ft/sec

(ii) Rifled - commonly 6 groove present (width)

- consist .rifles  
revolver  
pistol
- rifles - long barreled weapon
  - velocity 2500 ft/sec
  - 0.30 calibre bullet etc.
- revolver - it is hand gun
  - less than 10 inch in length
  - velocity 600-800 ft/sec
  - range is 100 yards
  - loaded five or more cartridge
- pistol - length is 10 inches
  - 5-6 cartridge loaded
  - velocity - 1200 ft/sec
  - range - 100 yards

(iii) Air Pistol - range - 30 yards

- velocity - 400-700 ft/sec

② Intermediate ballistics - for forensic pathologist  
special filled in expert

③ Terminal ballistics -

- (A) Factor effect
- (B) wound by firearm
- (C) wound by shotgun
- (D) wound by rifling
- (E) Autopsy

① Factor - weapon nature

- projectile nature (गोलियु)
- Velocity
- direction
- Angle
- time of discharge

② wound cause by fire arm

- entry wound } in between truck
- exit wound }

③ wound by shotgun - exit wound absent

- entry wound depend - contact shot
  - close range
  - medium range
  - long range
  - size of bullet

④ wound by rifling - same - entry wound  
- exit wound

⑤ Autopsy - observation of - scene of crime

- clothing
- bullet wound
- cause of death

⑥ medico legal - cause by fire arm or not

- distance of fire arm
- nature of fire arm
- direction of fire arm



## Sterilisation

def<sup>n</sup>. Sterilisation is permanent method of contraception for people who don't want more children

- it work by stopping sperm from meeting an ovum

TYPES :- ① Compulsary  
② Voluntary

① Compulsary - it is done compulsorily on mental defectives

② Voluntary - (A) Therapeutics - to prevent health or life of women by future pregnancy e.g - repeated cesarian

(B) Contraception - perform to limit the size of family,

(i) Permanent - Vasectomy in male  
Tubectomy in female

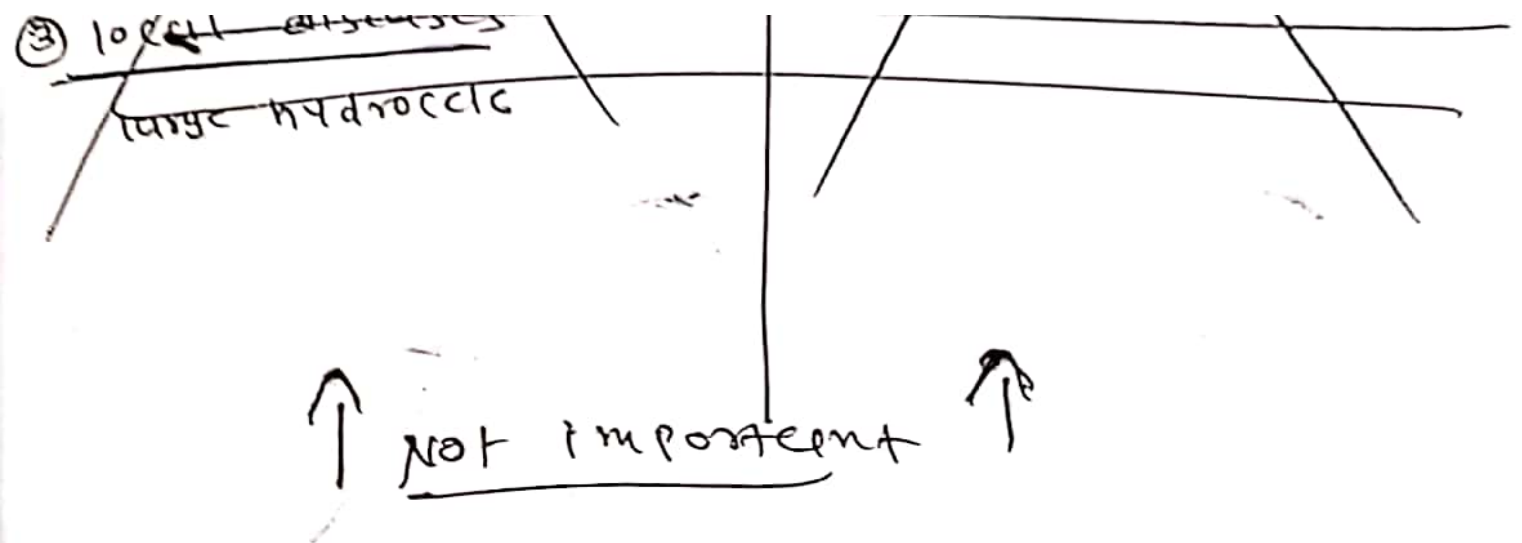
(ii) Temporary - condom, foam Tub.

\* Precaution - written consent of wife & husband for permanent sterilisation

- couple should have atleast two children

- check up after Vasectomy for sperm

- when pills use complication should treated



## Artificial insemination

\* def<sup>n</sup> - artificial ~~insemination~~ introduction of semen in to vagina, cervix & uterus

\* Types -

|   |                         |                   |
|---|-------------------------|-------------------|
| ① | Artificial insemination | of husband        |
| ② | "                       | " donor           |
| ③ | "                       | " donor & husband |

\* Indication -

- husband impotent
- husband sterile
- Rh incompatibility
- Risk of inheriting diseases

- \* Precaution - consent of donor & his wife
- donor below 40 yrs
  - donor not related to woman or husband
  - written consent needed
  - nurse be present during insemination

- \* medicolegal - Adultery
- Legitimacy
  - incest
  - divorce

## Virginity

- \* def<sup>n</sup> - woman who has not participated in sexual intercourse is virgin
- loss of virginity is defloration

- |                |           |                |                      |
|----------------|-----------|----------------|----------------------|
| * <u>Types</u> | - Annular | * <u>cause</u> | - Accidental         |
|                | semilunar |                | - surgical operation |
|                | colbiform |                | - ulceration         |
|                | septate   |                | - scratching         |
|                | elastic   |                | - sanitary tampon    |

- \* medicolegal - true virgin  
false virgin



## Pregnancy

\* defn - fertilisation of ovum by sperm and develop. foetus is pregnancy

\* sign of pregnancy -

- ① Presumptive
- ② Probable
- ③ Positive

① Presumptive - Amenorrhoe, morning sickness, fatigue, breast, skin, Vagina

② Probable - Abdomen, uterus, cervix, foetal part, biological test

③ Positive - x-ray, Sonography, fetal movement, fetal heart sound

inquiry-  
defn  
class.

Court  
def  
type  
procedure  
Record  
evidence  
witness

identification  
def  
type  
Necessity  
Importance  
death

death  
def... <sup>death</sup> mod  
types  
stage death  
modest death  
signot death  
Asm - immediate  
Asm - early  
- late - late

Post mortem

definition  
types - <sup>form</sup> medic.  
objective  
Rules  
Requirement  
procedure  
Collect sample  
Laboratory exam  
Report  
Disposal body

Asphyxiation

hanging - complete  
                  incomplete  
                  Asphyxiation  
strangulation - <sup>pro per</sup>  
                    - strangling  
                    - mugging  
                    - banding  
                    - garroting

Suffocation

Smothering  
gagging  
Bystering  
choking  
overlying  
Traumatic

drowning

complete  
incomplete  
dry  
wet

starvation

defn  
rule - <sup>best</sup> chronic  
Cause =

sterilisation

defn  
type - <sup>compulsory</sup>  
          - Voluntary  
          - Thermo  
          - Chemical

Artificial Insanitation

- defn  
- types - <sup>down</sup> <sup>hurry</sup> <sup>both</sup>  
- Indication  
- Precaution  
- medic legal

Burn

defn  
class. <sup>Asm</sup> <sup>mod</sup> <sup>mod</sup>  
          - <sup>acc</sup> <sup>3rd, 4th, 5th, 6th</sup>  
          - <sup>nature</sup> dry, wet  
          - <sup>incidence</sup> accidental, side  
          - <sup>degree</sup>

Rule of nine

Cause - <sup>immediate</sup> <sup>late</sup>  
          - <sup>shock</sup> <sup>suffocation</sup> <sup>injuries</sup>  
          - <sup>Intoxication</sup> <sup>exhaustion</sup>

Post mortem

medic legal

Virginity

- defn  
- type hymen  
- cause rupture  
- medic

delivery