WOUNDS

- Disruption of normal tissue/organs caused by injury/application of force.
- Force applied may be supplied by moving instrument or object or by the movement of the body itself

Factors affecting wounds

- Nature of the object or instrument i.e. sharp Vs blunt objects
- amount of energy discharged during impact KE=1/2mv(2)
- conditions under which the energy is dispersed i.e. time taken to impact

- Nature of affected tissue i.e. skin is pliable while soft tissue is less so and often is caught between rigid one hence causing extensive damage, fluid and gas effect

- Mechanism of wound production is complex and depends on many variable factors that to a large extent cannot be accurately assessed
- different wounds can result from equal forces when applied at the

- The same region of the body in different circumstances
- severe wounds may follow apparent trivial forces and large forces may cause minor wounds

- Express opinion on probabilities, given in broad and qualified terms
- its impossible to scientifically express an opinion on the amount of force which must have been applied to cause a given wound

Physical exam

- No. of wounds
- nature and site - anatomic sites e.g. ht in body above heel and the distance to the right or left of the midline
- margins surrounding - hand lens
- Character and extent of damage to skin surface, minimal and maximal width
- when skin is penetrated including underlying tissue and/or visceral damage and or penetrated

Wounds that are fatal

- Assessment and opinion should include:
- when inflicted ante or post mortem
- wholly or partially responsible for the death
- The part the played in the train of events leading to death
- how injury was caused and what may have caused it
- probable amount of force used to produce wound

- In multiple, an opinion as to which one if any caused death
- in difficult cases = say that the wound occurred at the time of death.

Age of wound

- Reddened in 12hr post injury
- scab formation in small wounds in 24hr
- pus formation in 36hr

Types of wounds

- **Abrasion**- scratches, grazes,impression abrasions, impression marks, friction marks
- destruction of the skin involving the superficial layers of the epidermis only.
- Often parallel with a tailing of
- appearance is indicative of direction in which the force took place
- often caused by blunt objects and falls

- Often accompanied by other types of wounds esp bruises, fractures and internal injury
- nail marks often on the neck in throttling and on thighs, vulva and wrists in rape cases

Bruises and contussions

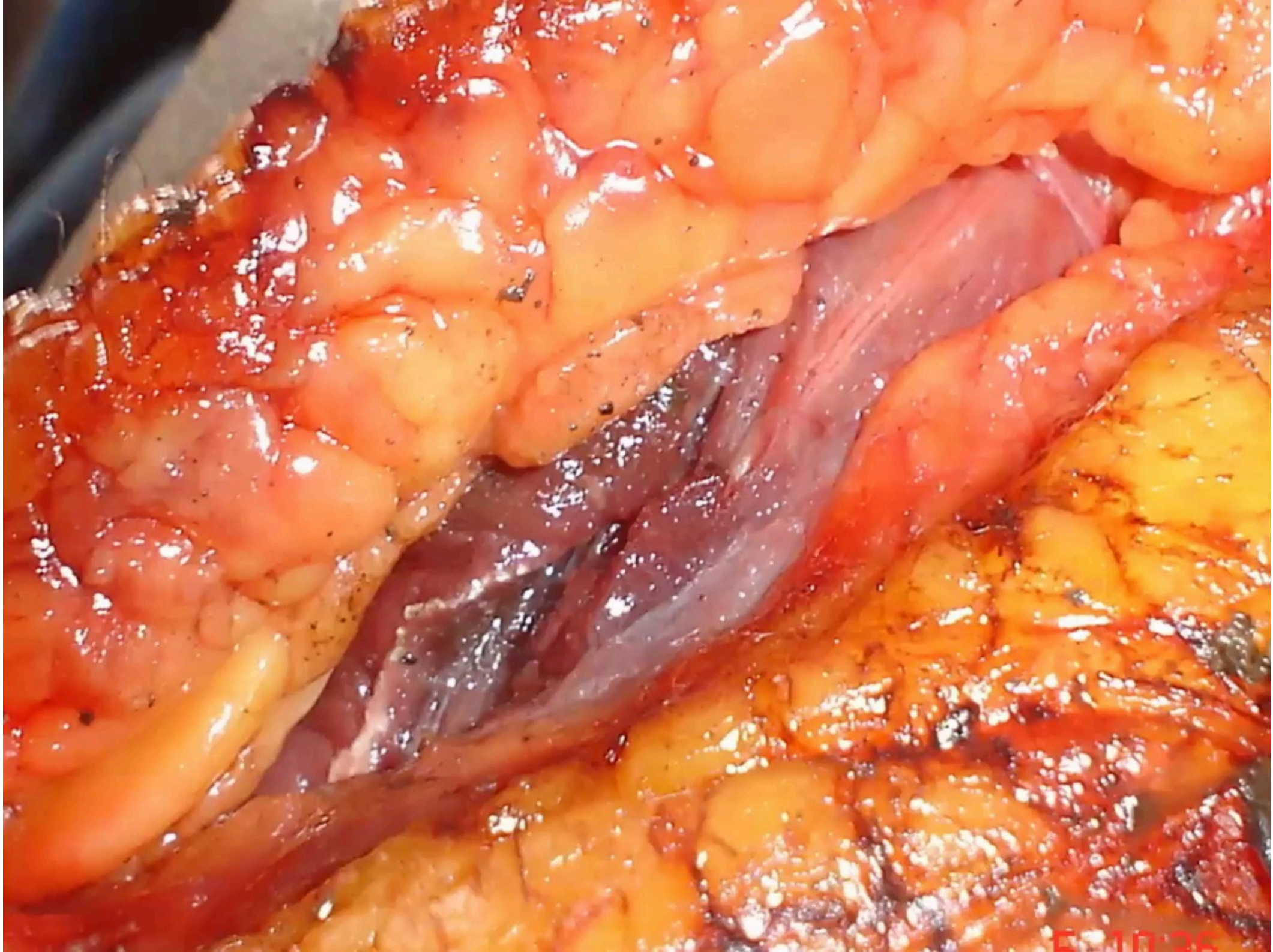
- wounds characterized by bleeding in to the tissue spaces
- caused by blunt objects
- extent and degree depend on amount of force, structure & vascular
- Shape and size may bear no relationship to the weapon
- external pattern may correspond to weapon or object producing it e.g. tire marks
- may appear after variable period to
- Injury to deep organs deep bruises may never appear on the surface

Incised-cuts and slashes

- Caused by sharp objects/weapons
- usually gape and therefore breadth of weapon cannot be determined from the wound
- seen in assaults and homicides

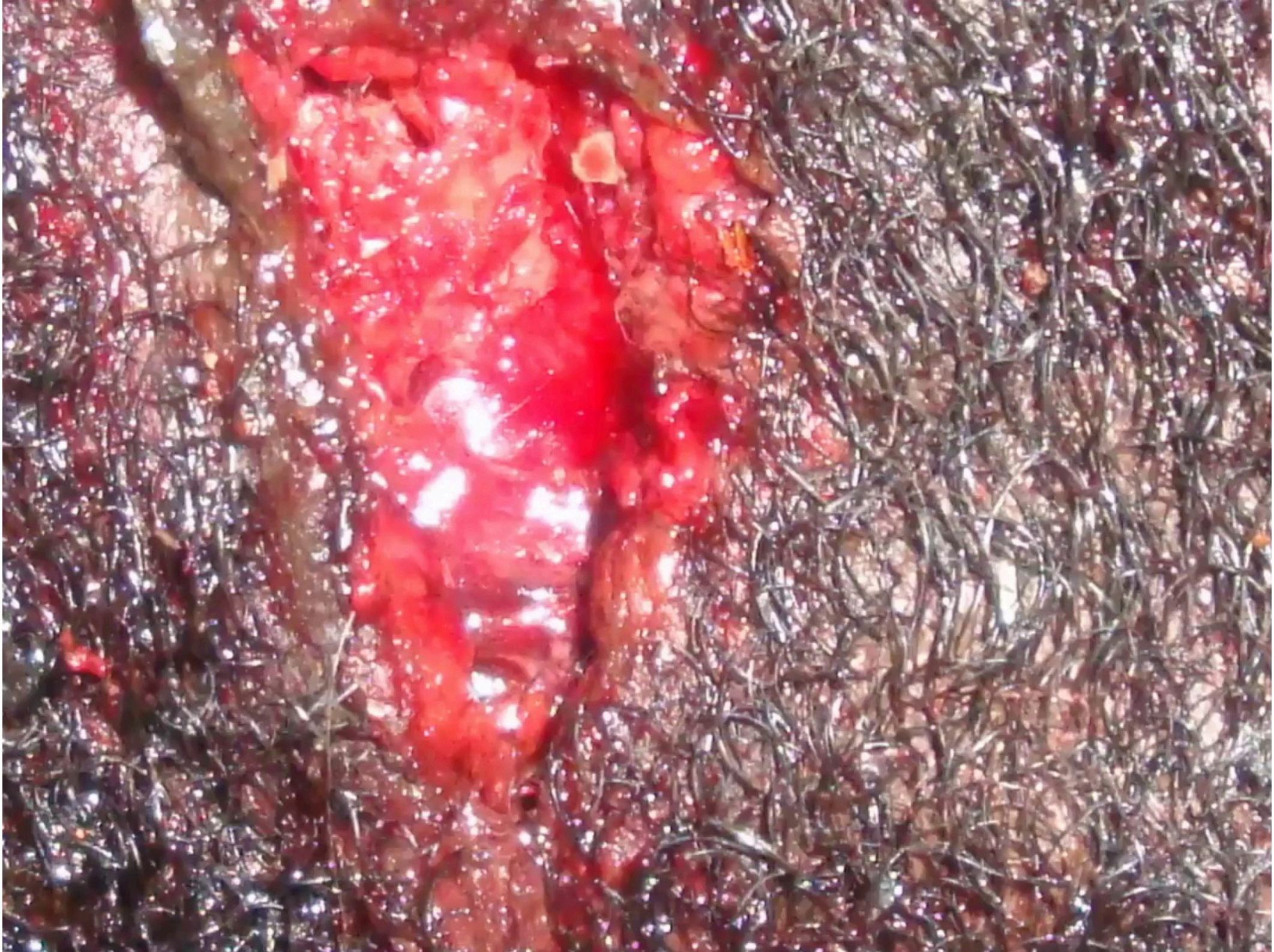
- Accidental ones seen in RTAs
- suicidal ones are seen on wrists and neck
- self inflicted in cases of false accusations are seen in any part but mainly on the head, left arm

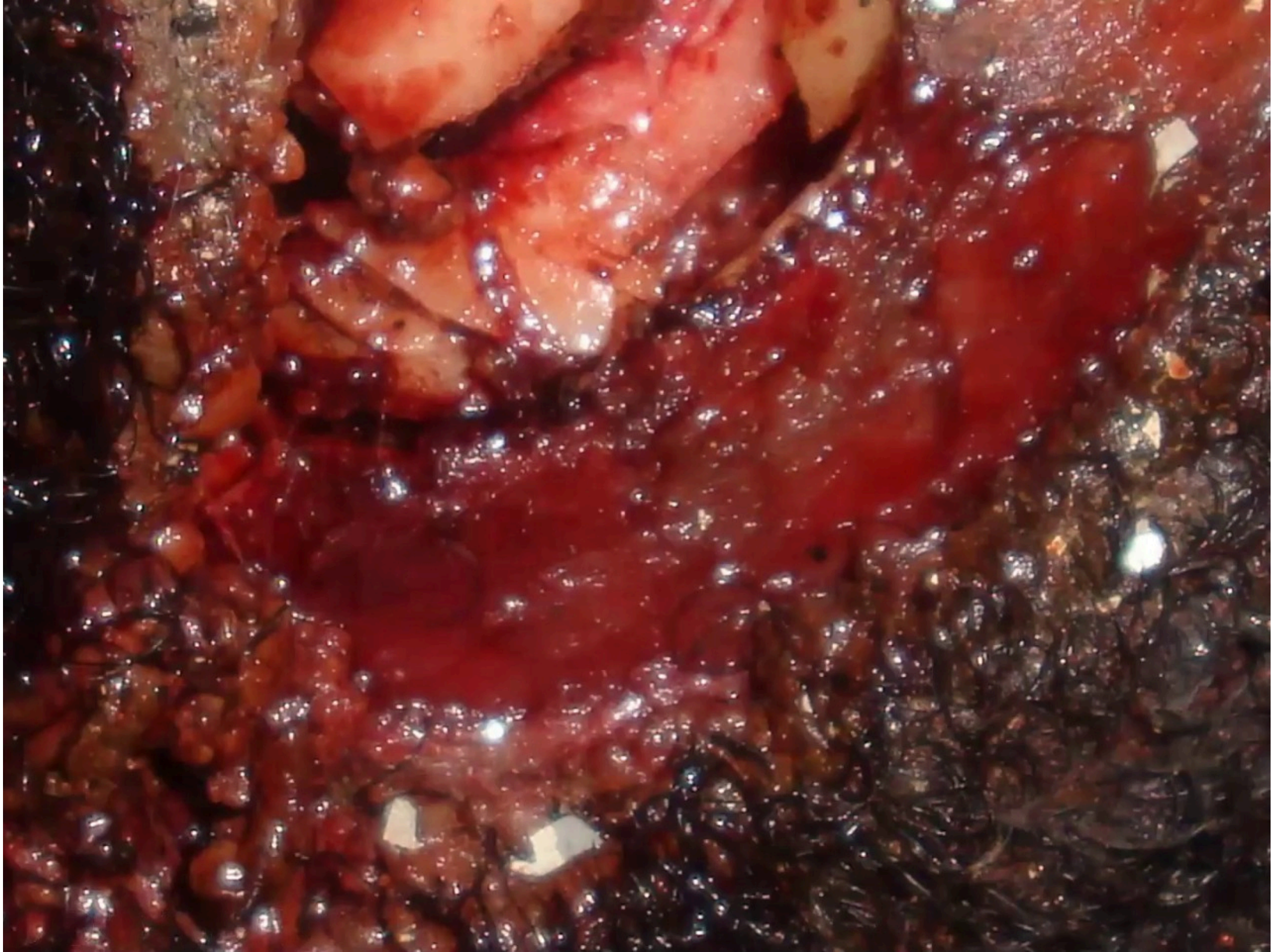
- Thigh, front of abdomen and chest
- clothes are not damaged in such instances



lacerations

- Tearing of tissues due to blunt force same as no bruises
- wounds bear resemblance to weapon
- depth is variable, hand lens shows intact vessels, nerves and tendons





- May resemble a cut.
- Laceration of organs may be due to fragments of bone
- combinations of cuts and laceration e.g. bottle that breaks

Stab and puncture wounds

- Caused by long narrow instruments with blunt or pointed ends
- penetrating when they pierce deeply and perforating when they transfix tissues and cause exit wounds
- Shape and dimension cannot be determined from shape of the wound
- often external h'rage is limited but internal maybe extensive
- handle may cause patterned bruises

In puncture record

- Site and nature of cuts in cloth
- site and no. of wounds
- nature of wounds i.e. maxi-mini diameters, shapes and direction
- depth of penetration, tissues involved
- Injury to viscera
- estimation of rapidity of death
- possible movement of person after injury
- whether accidental, homicidal or suicidal cause of death

FIREARM INJURIES

- Fatal bullet wound may be produced by rifles, revolvers or automatic pistols
- must consider entrance wound, bullet tract and exit wounds

- Revolver are low velocity while pistols are high velocity.
- Exam of wounds reveals

  -range of fire

  -direction of fire

  -kind and type of ammunition used

- nature of wound as to whether accidental, suicidal or homicidal
- **range of fire**
- entry wound - contact, close range and at a distance
- contact wound is cruciate due to

- Due to gas released as missile is discharged, tissue in bullet tract are stained black
- at close range of within 6 inches there is loss of the laceration and burning effects.
  Bruising+Tattooing

- Range beyond 6inches - burning is lost but tattooing is present. The limit within which tattooing occurs varies with the weapon
- **direction of fire**
- this is determined by the entry

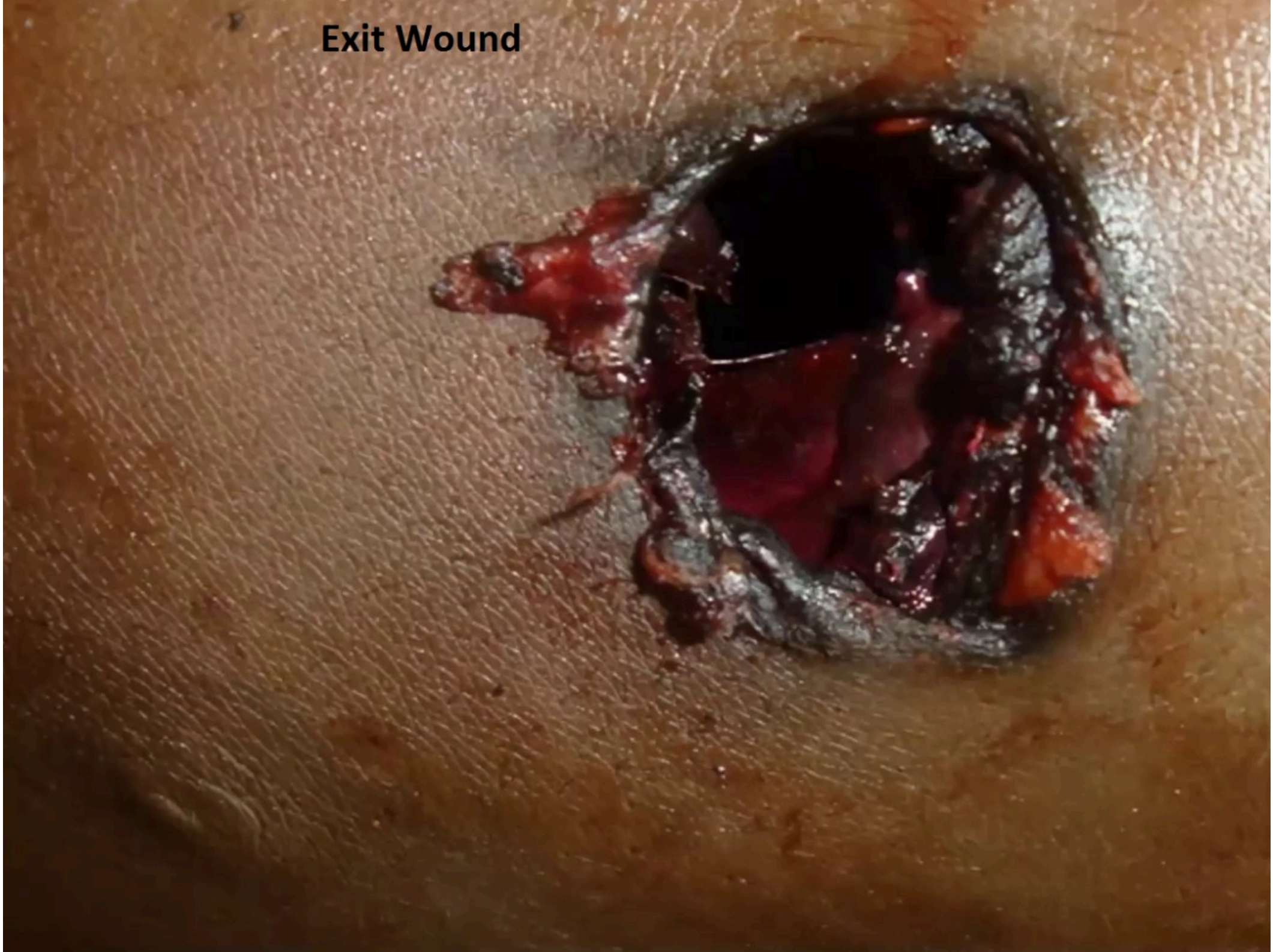
- Wound and direction of bullet tract
- **kind of weapon**
- size of wound is smaller due to the stretching of skin
- **nature of wound** determined by the circumstances

- Acceptable sites in suicide include the temple, heart, mouth, chin and neck
- multiple wounds are often homicidal
- exit wounds are irregular in shape

- Edges are everted and torn
- contact entry wounds, exit wounds are smaller but at longer distances they are larger
- denser tissues show more destruction i.e. bone

- Bone fragments act as secondary missiles and may cause a series of exit wounds


Entry Wound


Exit Wound

Burns