

CHARACTERS OF FIRE ARM INJURIES (WOUND)

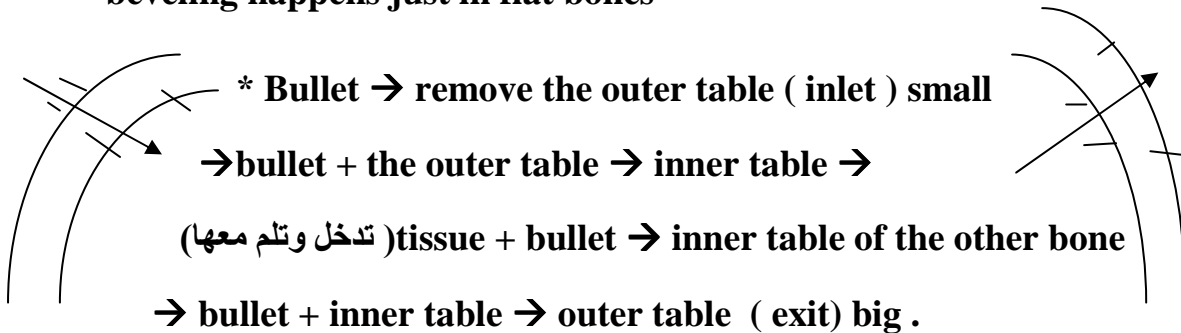
1. **Loss of substance**: This important character of fire arm injuries especially at the **entrance**. This loss *depends on* :
 - the size of missile → if it's shot or bullet.
 - velocity .
 - distance of firing. long distance → less damage.
2. **Presence of two wounds inlet and exit or may be one wound or more than one** :
 - Inlet only: due to **far distance of firing** and the missile is **retained inside the body**, this, easily seen by X-ray in the living and by dissection in the dead bodies or the **bullet pass tangentially (grazing of bullet)**.

Grazing of bullet : laceration of the soft tissue without bone involvement (low velocity or far distance) .
 - Outlet only: the missile enter from natural opening. Like (mouth)
 - More than one : the missile came from the side → outer aspect of the arm → inner aspect of the arm → enter the chest.
*Or if he sit in a chest –knee position & the missile came from the back → penetrate the chest → to the outer aspect of the thigh → inner aspect of the thigh.
3. **Possible presence of associated of projectile**: powder marks present on the inlet only .

4. **Beveling occurs in flat bones:** (skull, ileum, sternum and scapula).

This is due to the fact that one of the tables of the bone is supported and the other is not, where the internal hole is wider, beveling is always to the inside of the inlet and to the outside of the exit.

*** beveling happens just in flat bones



DIFFERENCE BETWEEN INLET AND EXIT:

	inlet	Exit
Size	Small	Large
Loss of substance	More زي الدرل	Less
Powder marks	+++	No
edge	<p>(3la jwa 5afsah)Inverted except :</p> <p>Everted { Near firing <15cm Fatty area (abdomen) Purification (bcoz of gases)</p>	(3la bara)Everted
Beveling	internal	External

FACTOR AFFECTING THE SHAPE OF THE FIRE ARM WOUND

a) The type of the weapon :

whether shots or bullets, and short or long weapon.

b) Distance of firing:

∞ One central hole (near firing) or dispersed shots (Far firing).

∞ Size . near firing → small hole & more deep

Far firing → large hole

c) Direction of firing:

∞ A perpendicular injury → a circular wound (واقف قدامه)

∞ Oblique direction or slanting → oval wound & the powder marks show the side where the bullet comes from . (من الجنب)

∞ Tangential → tract wound . (grazing of bullet)

d) Site of the wound

A fire arm wound in corrugated area of skin as in axilla, neck, scrotum may appear irregularly lacerated, where in other parts of the body appear circular opening .

e) Type and amount of the powder.

∞ High amount of powder → more injury

∞ Black powder because it contains carbon cause →blackening of the wound

∞ Smokeless powder cause →grayish wound.

if the powder becomes wet → it will not shoot or it will shoot with less power.

Estimation of the Distance of firing:

This depends on the nature of the weapon used and the type of the powder present in the cartridge .

1- In cases of short distance (near firing): (up to 3 m)

The estimation of distance is based on the presence of associates of projectile :

Powder marks in **both rifled & non-rifled** :

- 1- Effects of gases reach about 15 cm and cause tearing of the entrance.
- 2- Flam (causing burn) reaches a distance equals to half the length of barrel.
- 3- Smoke (causing blackening) reaches a distance equal to 1-1.5 the length of the barrel.
- 4- Unburnt particles (causing tattooing) reach a distance equal to 2-3 times the length of the barrel.

Non rifled :

5-Internal wad→ up to 3m → penetration of the body.

→3-10 meters →It strikes the skin causing circular abrasion or contusion.

6- External wad (outer wad)→up to1m→penetration

→1-3m → abrasion or contusion.

→3-10m→ no effect

7- Up to 2 meters the whole shots enter the body in one mass producing only one central hole.

II- In cases of long distance (far firing):

• Non-rifled:

The estimation of distance is based on the **extent of dispersion of shots:**

- 1- At 2 meters and more start of dispersion i.e. a central hole and few surrounding separate shots hole.

- 2- at 3 meters the central hole gets smaller in size with increased dispersion of shots holes.
- 3- At 4 meters complete dispersion of shots holes having a circular diameter of about 16 cm.
- 4- At 6 meters the area of dispersion is about 32 cm.
- 5- At 8 meters the area of dispersion is about 50cm.
- 6- At 10 meters the area of dispersion is about 60 cm.
- 7- In longer distance, the spaces between the shots are increased and the power of penetration of shots is decreased.

- **Rifled**

In cases of bullets it is estimated by **the amount of penetration:**

Inlet + outlet present → near firing .

Inlet only → far firing.

Multiple hole → near firing.

v.imp :The best character of inlet is :

- a) Loss of substance
- b) Edge
- c) Beveling
- d) Powder marks

Done ☺

GOOD LUCK

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