

ASPHYXIA

With note 

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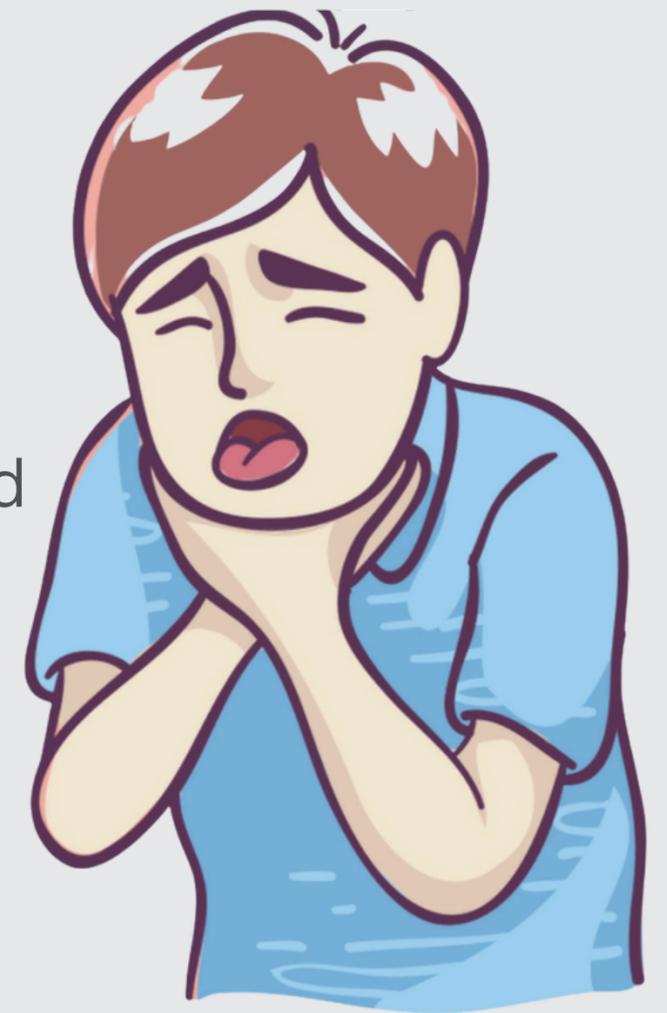
Ahmad Qawasmi Marwa alturman

by: NOor almaharmah

Definition:

- Asphyxia is used as being equal to “**lack of oxygen**” or “**hypoxia**”.
- Asphyxia word is Greek means (pulsenessness) or (absence of pulse).
- Etiological classification:
 1. **Mechanical/violent**: Mechanical interference to the passage of air into the respiratory tract. **blockge of airway passage (there is no oxygenation)**
 2. **Pathological**: Entry of oxygen to the lungs is prevented by disease of the **upper respiratory tract** or **lungs**, e.g. laryngeal edema, spasm, tumors and abscess.
 3. **Toxic or chemical**: Cessation of the respiratory movements due to paralysis of the respiratory center in poisoning with morphine, barbiturates, **posining in chemical subestance lead to depression in respiratory center**

• • • • •



Gordon's classification

① Anoxic anoxia

② Anemic anoxia

③ Stagnant anoxia

④ Histotoxic anoxia

Anoxia : reduce of O₂
in the blood & tissue

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Gordon's classification:

Anoxic anoxia:

الـ lung نفسها ما بدخلها ك. مية اكسجين مناسبة،

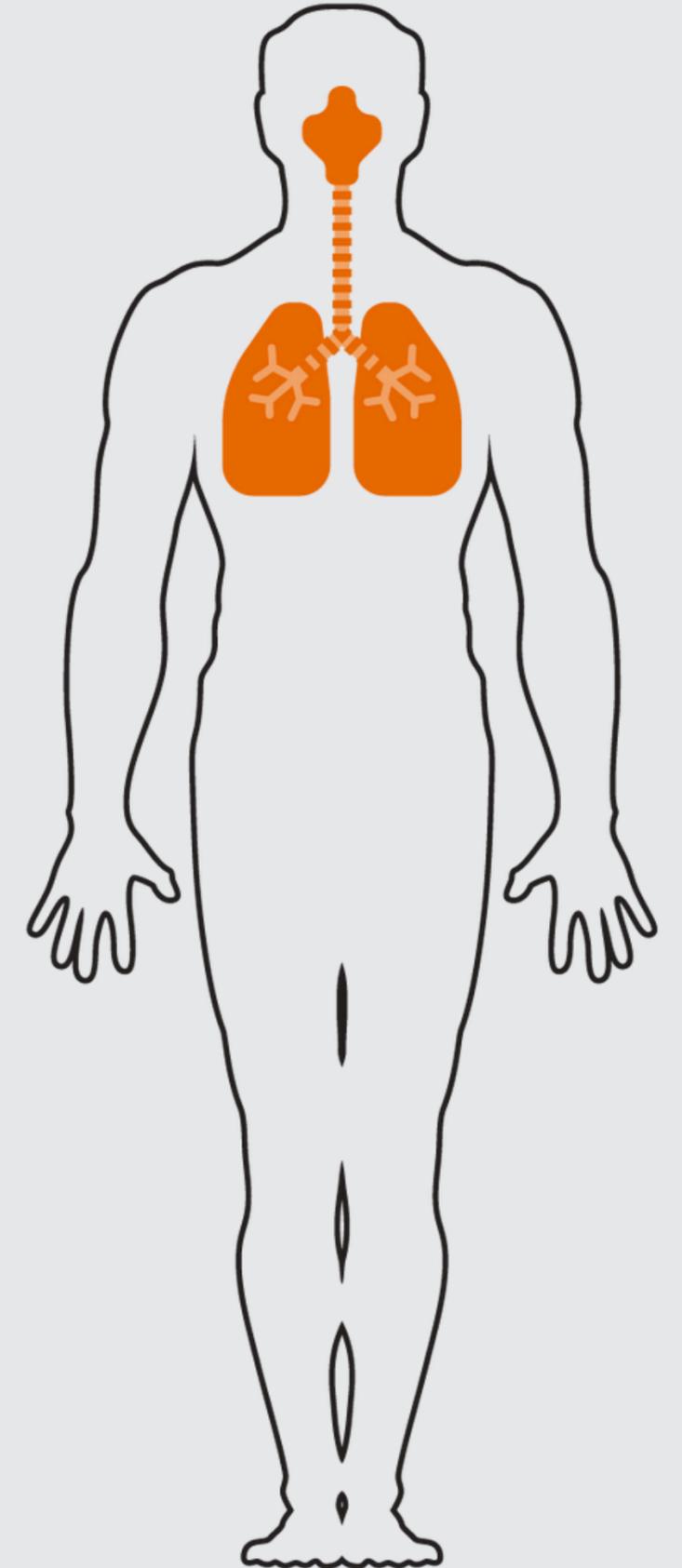
ممکن من الجو او تسكير في مجرى التنفس او

مشكلة بال lung نفسها

This means **defective oxygenation of blood in the lung** (defect in O₂ delivery from the lung to blood) and due to:

- 1- **Absence of oxygen (High attitude)**
- 2- **Obstruction to respiratory passage (mechanical asphyxia)**
- 3- **Obstruction to respiratory movements**
- 4- **Depression of respiratory centre (toxic asphyxia)**

• • • • •



Gordon's classification:



- **Anemic anoxia:** مشكلة في الدم لنقل الـ O_2
decrease O_2 **carrying capacity** of the blood: hemorrhage and **CO poisoning**.
- **Stagnant anoxia:** *Type your text*
Inefficient **circulation** through the tissues, as in: **Shock** and **heart failure**
+ anaphylactic
- **Histotoxic anoxia:**
Inability of the tissues to **utilize** oxygen delivered to them, **cyanide poison**
Defect in cellular level

• • • • •

Types of violent Asphyxia



المهم هون
التسكير يكون للـ
opining (mouth and nose)

01

Smothering

(external closure of airway orifice)

02

**Manual strangulation
(Throttling)**

03

Hanging

04

Ligature strangulation

05

Choking
(internal closure of airway)
as aspiration foreign body

At level of larynx and Pharynx

06

**Traumatic asphyxia
(Crush asphyxia)**
**(Prevent respiratory movement
externally by presser)**

Smothering



Hanging



Manual strangulation



Traumatic asphyxia



General signs of asphyxia

موجودين بكل الحالات
بس بتفاوت

External appearance :

due to **struggle to breath** against some resistance.



مثلاً في حالات الـ
CO2

blood بضل موجود في

- **Cyanosis** of face, lips & nails
- **Bulging eyes** with subconjunctival hemorrhage.
- **Dark blue hypostasis** except in red asphyxia (**cherry red color in red asphyxia**)
- (**hypostasis: the pooling of blood in the body's lowest-lying areas due to gravity, resulting in a purplish-red skin discoloration**)
- **Bloody froth at mouth and nose.** (due to ruptur of small venules of airway passage)
- **Protruded tongue**, which may be bitten except in hanging with posterior suspension.
- **Minute hemorrhages:** in the skin **above the level of obstruction**, especially in the face, eye lids and subconjunctival.

Due to
1. increase in venues presser
2. obstruction of airway passage

petechial haemorrhage

incomplet hanging

الفكرة حرة

Congestion of vein => Increase in venues preesser => increased presser in capillary => rupture in capillary

Internal signs

- Intense venous congestion of the mucosa of air passages ,lungs (except in drowning) and all internal organs.
- Tardieu spots :It is petechial haemorrhage which maybe ,subpleural ,subpericardial ,subarachnoid ,in the brain, heart & mucousmembranes.
- Silvery spots (subpleural).
نتيجة ضغط الـ ruptured alveoli in plura
فيظهر لون سيلفر
- Dark fluid blood(excess CO₂ & excess fibrinolysin and disturbed plasma calcium).
- Dilated right auricle and ventricle due to secondary muscular flaccidity(at the moment of death all the muscle in the body immediatly relax)

**Sever cyanosis
& congestion**



Petechial hemorrhages

- They are **present everywhere** externally as well as internally.
- They are most observed in the serous membranes, particularly in the pleura and they are called **Tardieu spots** and visceral pericardium.
- They are due to:

**internally*

1. increased intra-capillary pressure as a result of mechanical obstruction of venous return .
2. escape of blood into tissue space: due to increased capillary permeability as a result of anoxia.

نتيجة دخول الـ plasma على الـ tissue space نتيجة

الـ ataxia الي صارت



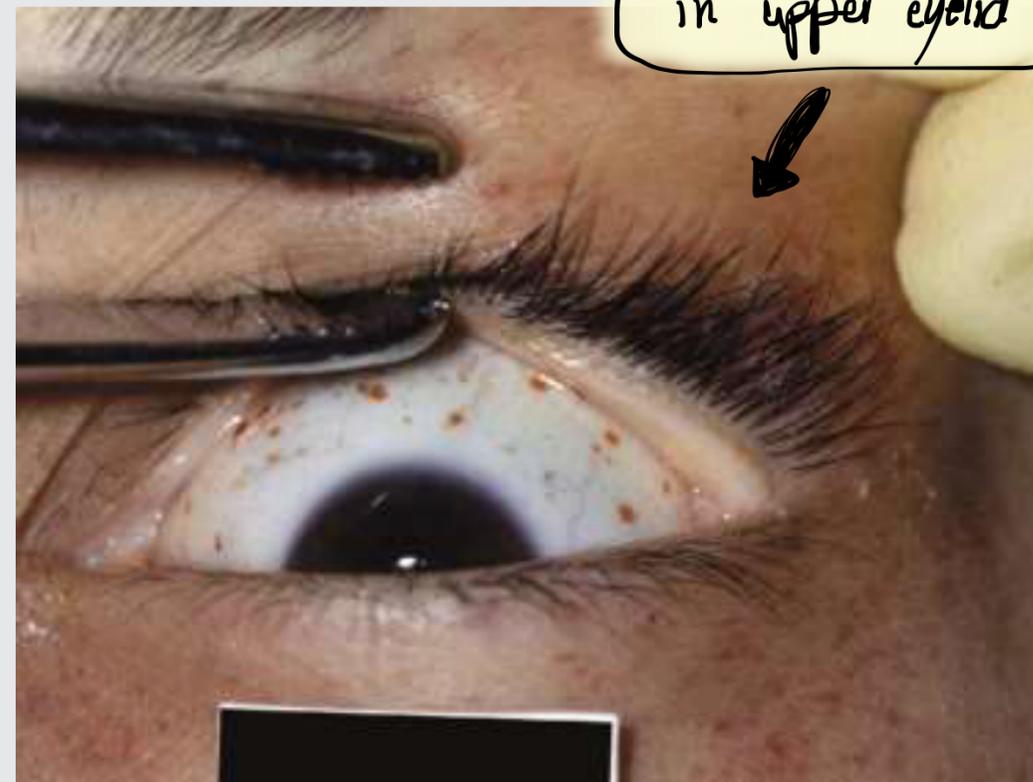
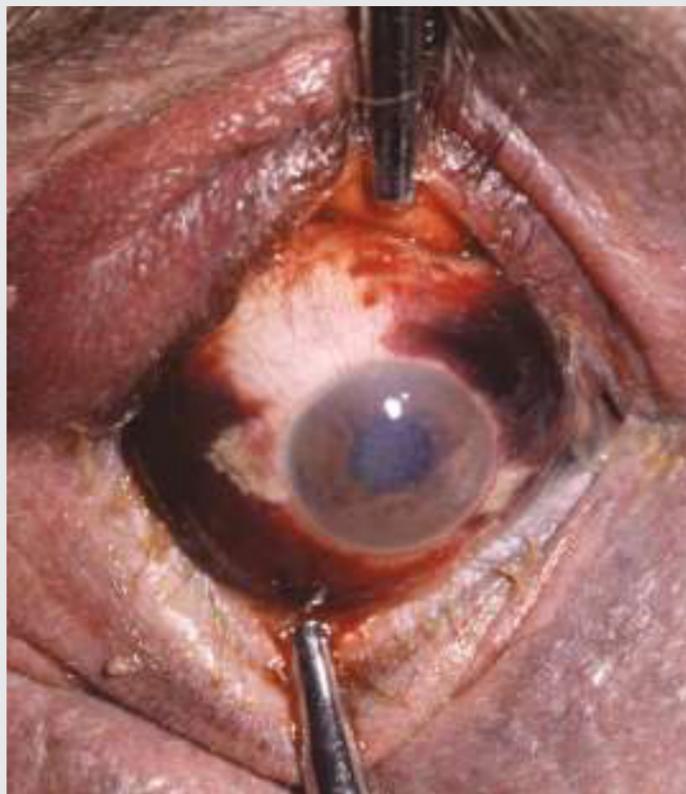
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- **Petechial hemorrhage** in **skin** & **eyes**, especially **upper eyelid**, **conjunctiva**, **sclera**, skin of face, lips, behind ears
- appear within **15 – 30** seconds

بالوجه بتظهر زخم → In fair skin

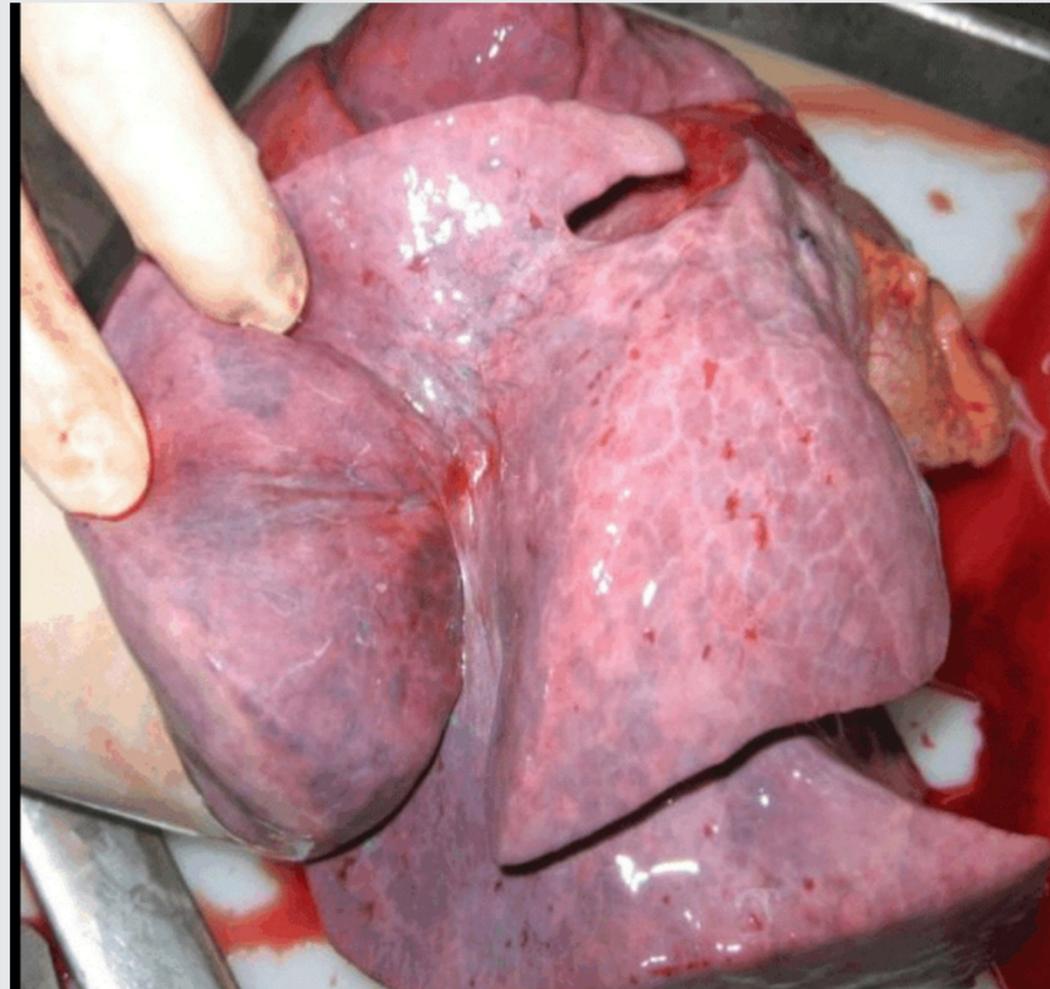
+especially in old patient due to Fragility of vessels

subconjunctival hemorrhage
(not asphyxia)



Tardieu spots :

It is **petechial haemorrhage** which maybe ,subpleural ,subpericardial ,subarachnoid ,in the **brain, heart & mucous membranes**.



**Asphyxic lung with Tardieu
petechiae localized subpleurally**

Smothering



Smothering:

- **Smothering** is a form of mechanical asphyxia caused by the obstruction of external respiratory orifices (mouth and nostrils) by hand, soft materials (such as a pillow), or other objects (e.g., plastic bags, cloth, or bedding). This prevents air from entering the lungs, leading to suffocation

.

نفس ما ذكرنا انو ال general signs موجودة بكل من
ال hanging & strangulation
بس هون في حالات ال. Something رح يكون اكثر وأشد
نتيجة ال struggle & resistance
بكون (mainly) homicidal والاطفال (accidental)

Postmortem picture :

- ① Nonspecific general pathological changes.
- ② Special pathological changes:

External injuries: Abrasions and contusions around the mouth and nose may be observed, particularly when forceful compression by hands or a rough object is involved. If a soft material (e.g., a pillow or cloth) is used, external injuries may be absent.

* Just in something

Smothering = Severe petechial hemorrhage

يعني

كل ما كان في struggle اكثر
(due to sudden)
increase & decrease in
(intravenous pressured

- **Internal findings** may include **congestion of the lungs, fluidity of blood, and petechial hemorrhages** in the conjunctivae and mucosae . May be found on the **inner aspects of the lips and cheeks** and are caused by **pressure upon the jaw and teeth**. Some **teeth may be found loose or even broken**

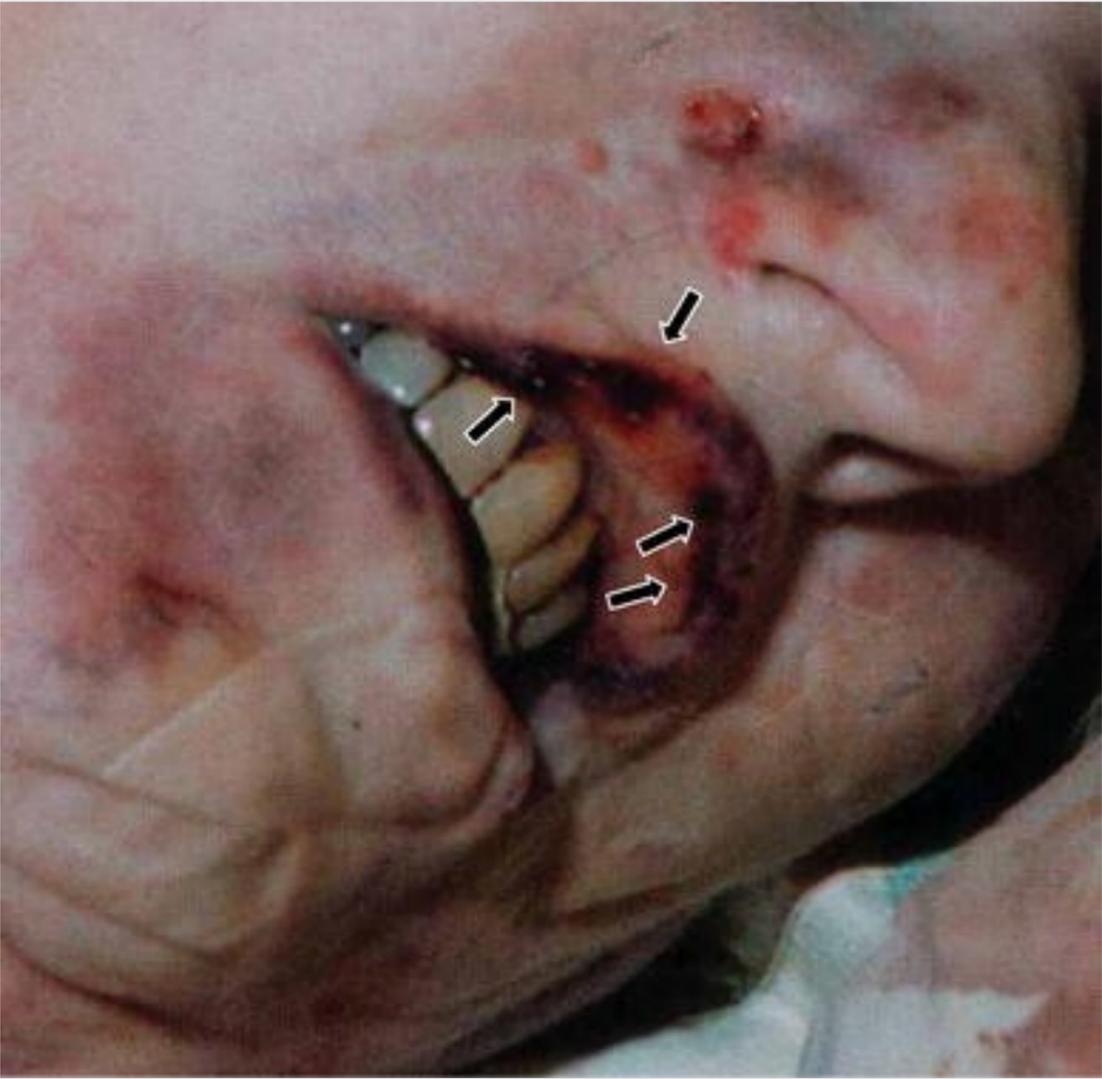
In **homicidal cases**, defensive injuries may be present on the victim's face or hands due to struggling.

Note :

Signs may be minimal **with non resistant** victims as **infants and alcoholics**.

السبب

Injuries to the inner cheek in a homicidal smothering case



Was it Suicidal, homicidal or accidental ?

- **Suicide** by hand is impossible or **Tying a plastic bag over the head** is rare.

A person cannot suffocate themselves just by using their hands, however, suffocation-related suicides, while rare, can happen using plastic bags, gas inhalation, or other means that prevent oxygen intake.

- **Accident: (most common)** :

الطريقة الوحيدة لحتى يكون ال smothering suicidal
In plastic bag

- In **children** playing with **plastic bags**

Young children might accidentally place plastic bags over their heads while playing, leading to suffocation

- An **alcoholic** adult who rolls over (**during sleep**) and his **face in the pillow**.

Excessive alcohol or drug consumption can cause **unconsciousness** and **loss of normal reflexes**.

If an intoxicated person sleeps in a **face-down position on a soft surface** (e.g., a **pillow, mattress,** or **blanket**), they **might suffocate** due to **obstructed airflow**

• • • • •



3. Homicidal Smothering:

- Unlike suicide or accidents, homicidal suffocation often involves **external force**. It may be done using a **pillow**, **cloth**, or **plastic bag**, usually in cases of **murder**, **child abuse**, or **elder abuse**.
- Signs of homicidal smothering include **defensive injuries**, **bruises on the face**, and **lack of a struggle** if the victim was incapacitated (e.g., sedated).

شو منلاقى؟! ↓



Case scenario :

A 3-month-old infant was found unresponsive in the crib by the parents in the early morning. The baby had been last seen alive a few hours earlier and showed no prior signs of illness. On external examination, there were minor abrasions and contusions around the mouth and nose, while no other external injuries were noted. Internal examination revealed petechial hemorrhages in the conjunctivae and lungs, lung congestion, mild brain edema, and a congested thymus. There was no evidence of infection, congenital abnormalities, or intracranial hemorrhage. Based on the combination of external injuries around the airway and internal petechial hemorrhages, the most likely cause of death is ?

- a) Sudden Infant Death Syndrome (SIDS) →
- B) Suffocation (smothering) ✓
- C) Brain hemorrhage ✗
- D) Severe anemia leading to circulatory collapse ✗
- E) Acute viral myocarditis ✗

???

وجود ال
petechial he

وجود ال petechial hemorrhage
هون هو العامل المشترك
ليش استثنيناها؟

عشان موجود external injury مثل ال abrasion





What do you think about the causes of death of a victim when pressure is applied on the neck

When pressure is applied to the neck, the causes of death can vary depending on the structures affected and the duration of pressure. In forensic terms, the main mechanisms include:

1. Airway Obstruction (Asphyxia)

- Pressure on the neck can compress the trachea, preventing air from entering the lungs.
- This leads to hypoxia (low oxygen) and eventually death if sustained.

2. Vascular Compression

- The carotid arteries can be compressed, reducing blood flow to the brain.
- Cerebral hypoxia occurs rapidly, causing unconsciousness within seconds and death if pressure continues.

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3. Venous Congestion

- Compression of the jugular veins impairs blood drainage from the brain.
- This leads to increased intracranial pressure, facial congestion, and sometimes petechial hemorrhages.

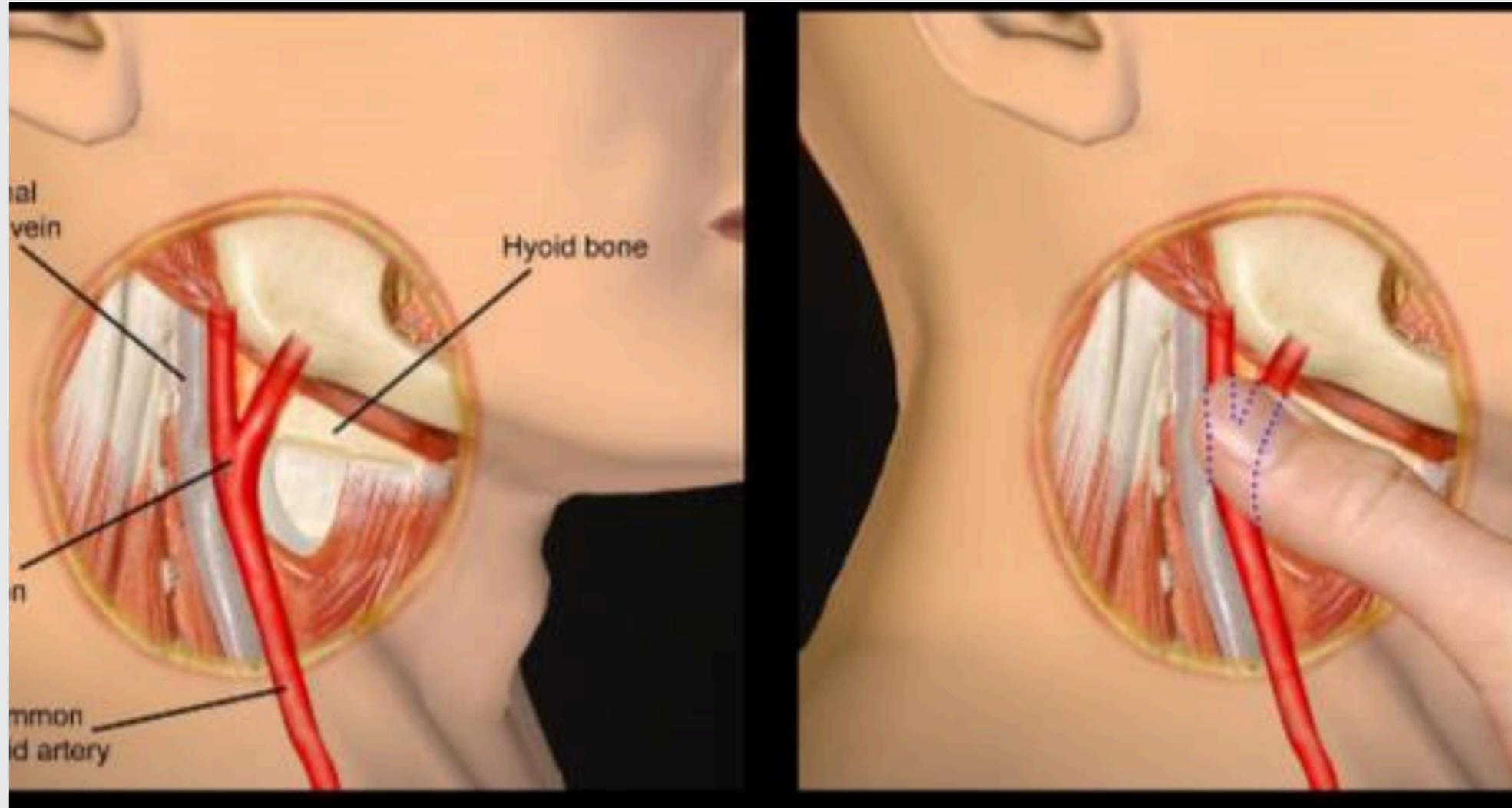
4. Direct Trauma

- Severe pressure may fracture the hyoid bone or cervical vertebrae, which can also contribute to death.

Stimulation of vagus=Cardiac arrest

Increase pressure of carotid sinus(Baroreceptors)= vagal stimulation

Effect of pressure on neck:



02. Manual strangulation (**Throttling**)



- caused by constricting the neck by the **hand**.
- **Mechanism of death** :
 1. Airway Obstruction (Asphyxia)
 2. Vascular Compression (Carotid arteries / Jugular veins)
 3. Vagal inhibition (pressure on the carotid sinus/vagus → sudden cardiac arrest)
- **Autopsy appearances:**

When death occurs as a result of **vagal inhibition**,
Asphyxial signs will be **absent**.

*General signs more prominent with straggul...
vagal inhibition .cardiac areest
سرعة الوفاة: immediate
ما بلاقي هاي الاعراض لانو ما لحقت تظهر أصلاً*



Was it Suicidal, homicidal or accidental ?

- **Suicide:** A case was recorded, and it was due to **cadaveric spasm**.

- **Homicide:** (most common) :

Stiffness of hand muscle
بتضل على الـ *last position* قبل الموت



- Circumstantial evidence.

أثار اعتداء على جسمه ، كان على مشاكل مع ناس ، المكان مخرب.. الخ (أدلة ظرفية)

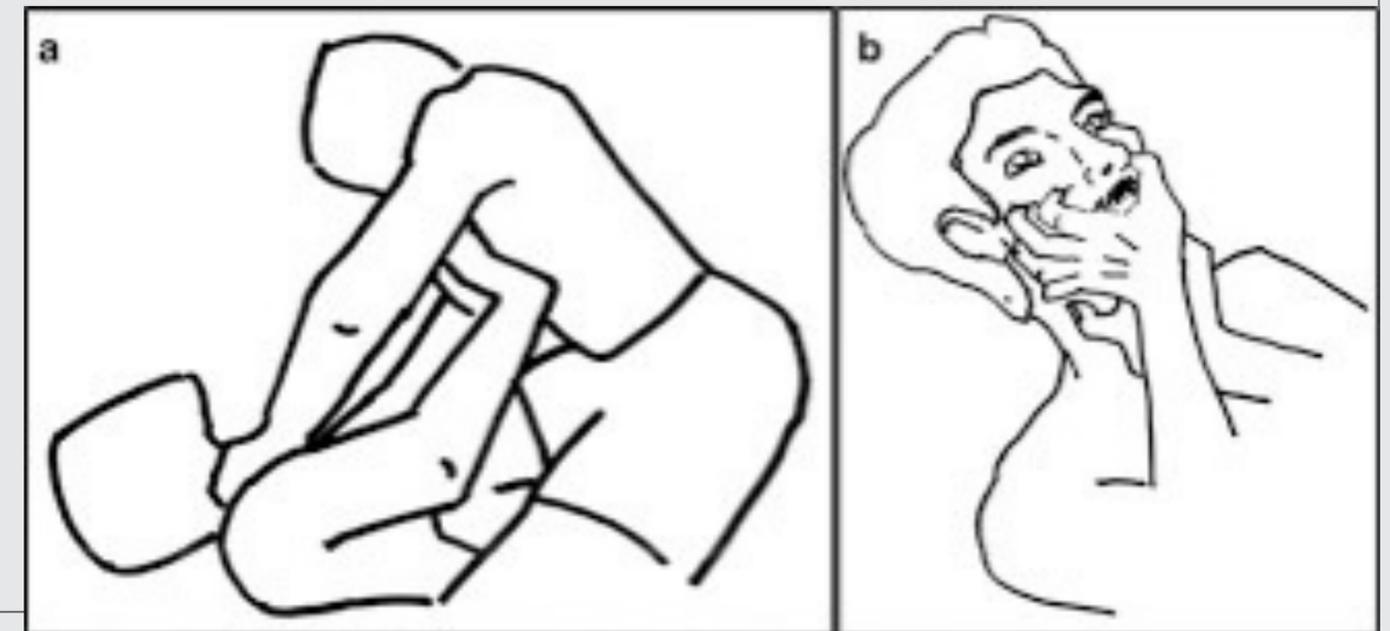
- Presence of signs of struggle.

ما بتكون اثار الـ *straggle* في حال كان شخص *alcoholism or comatose or infant* وكذا

- Evidence of drink or drugs, or the victim is young or weak.

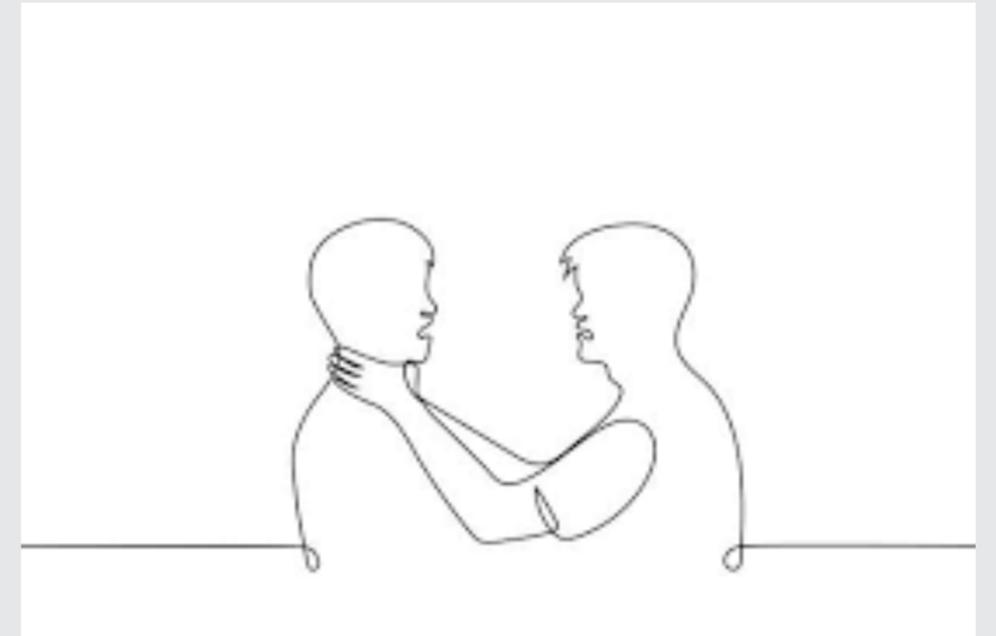
Accidental :
Cardiac arrest
واحد بمرح مع حد فبصير في *vagal stimulation* بسرعة

Cadaveric spasm is an immediate stiffening of specific muscles at the moment of death, preserving the last position.



Post mortem examination :

- **Nonspecific general** pathological changes.
- General external examination:



- **Cyanosis** of the face and lips
- **Multiple petechial hemorrhages** in the skin of the face, eyelids, scalp, and ear drums and in conjunctivae.
- **Bruises and abrasions** around the nose and mouth and are resulted from the attempts of the assailant to prevent the victim from crying or **assigns of resistance** in an attempt of the victim to remove the assailant's hands.

• **موت مكانه بسبب الوجوده كيعني معانه سكرته المتوفيه عنانه مايسخ فله**

Post mortem signs:

- **Special** examination of the neck

اي سبب غير ال *cardiac arrest*

كل ال *promenant* بتكون



External examination:

- Injuries on the neck
- **Abrasions** (caused by **finger nails**).
- **Contusions** (caused by **finger pads**).
- Both are found on the front and sides of the neck

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Post mortem signs:

- **Special** examination of the neck

- **Internally** examination:

مهم ،، انو في حالة الـ *manual strangulation* يكون في
Extensive abrasion in muscle of neck

- **Extensive bruises** are usually found in the deeper layers of skin, fascia, **muscles** of the neck, as well as in the substance of the thyroid gland.

منها منفردتها عن الـ *hanging*

- **Fractures of the hyoid bone** are commonly found in throttling and are accompanied by hemorrhage at the site of fracture. Fractured hyoid bone is a diagnostic sign for throttling even in a putrefied body.

- **Fracture of other laryngeal cartilages** occurs depending on the hand's grip and age of the victim.

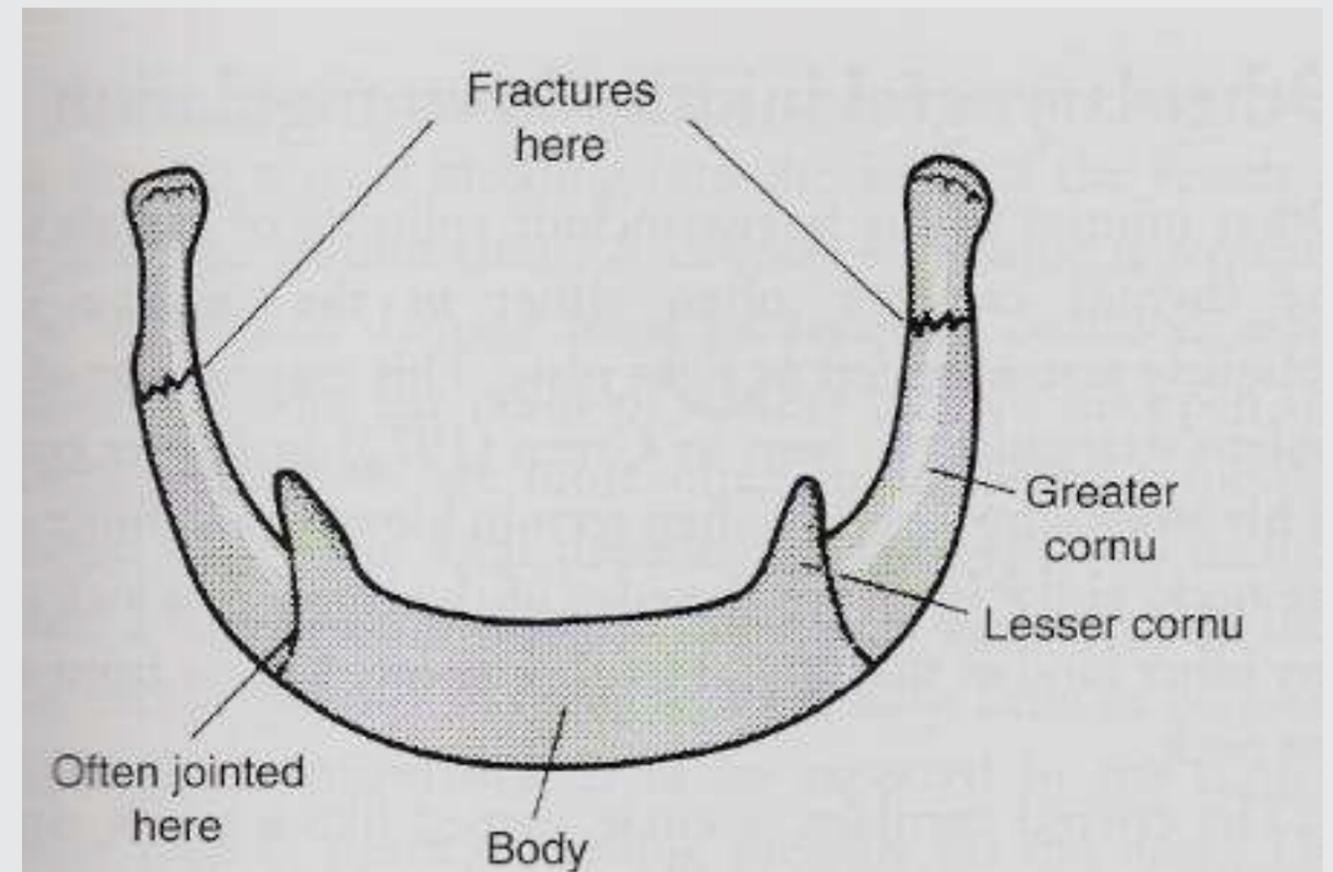
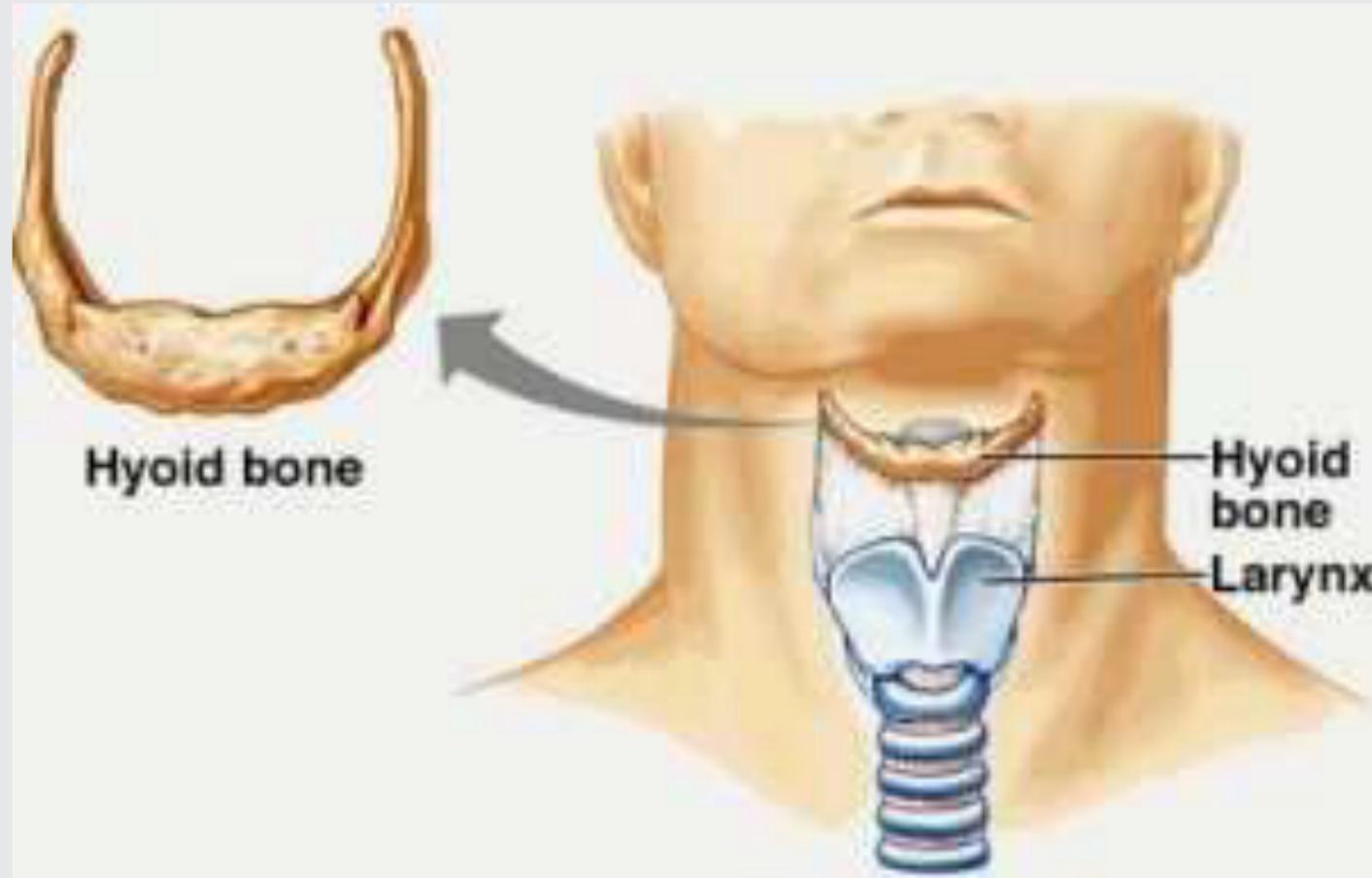
اكتر مع الـ **old age**

• • • • •

Hyoid bone fractures occur in:

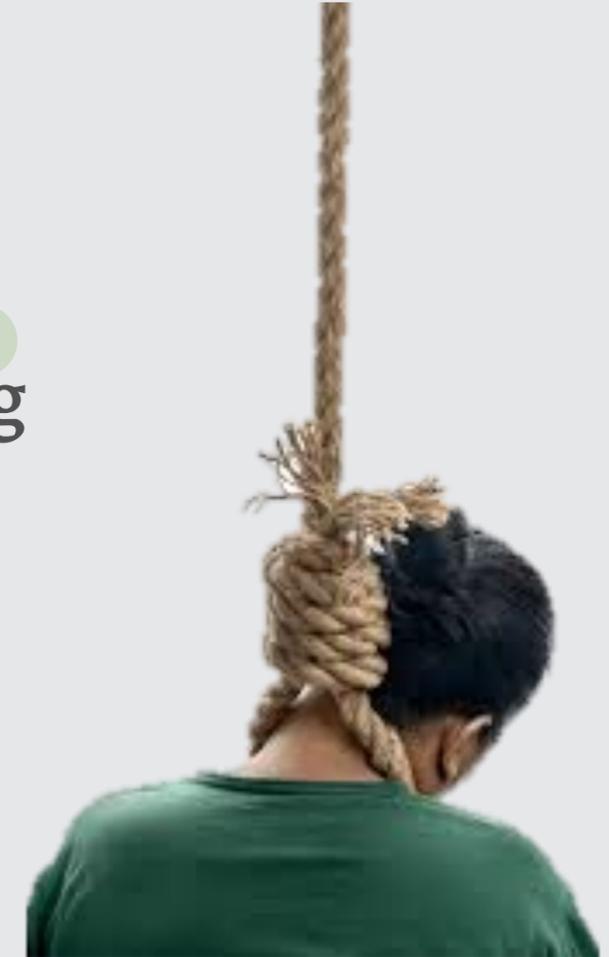
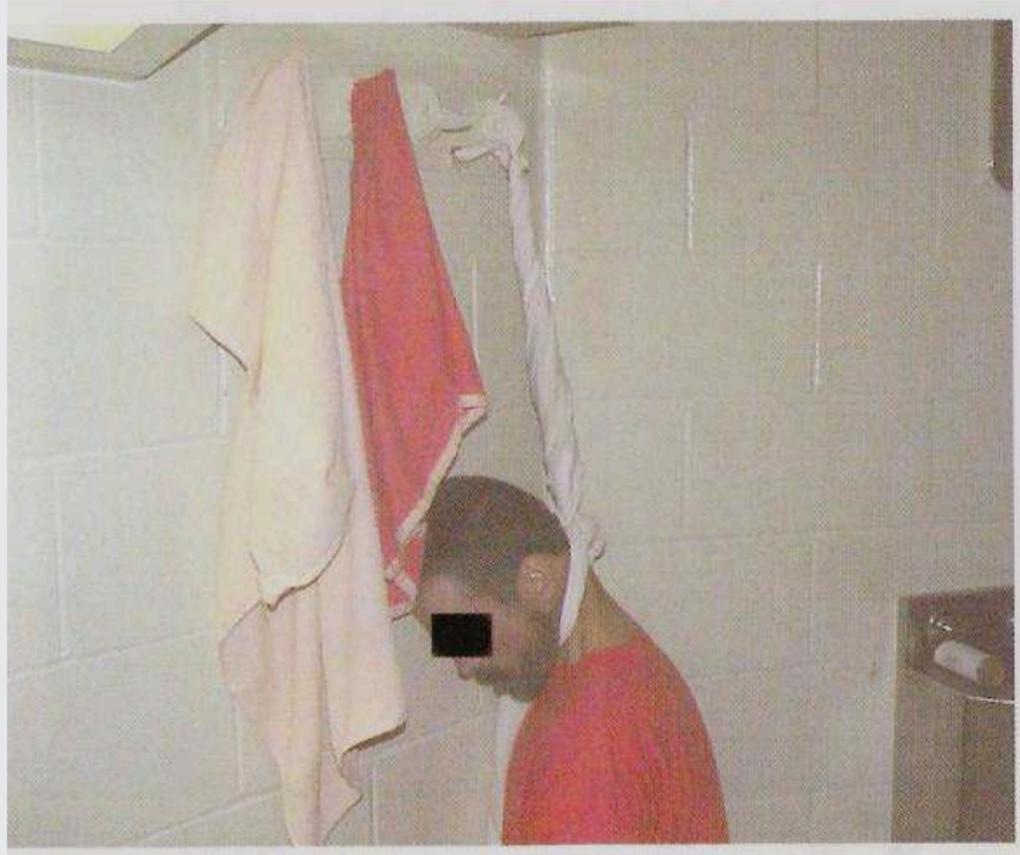
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- **Manual strangulation (Most common)**
- **Ligature strangulation**
- **Hanging**



03 Hanging

- **Hanging** is a form of asphyxia caused by suspension of the body by a ligature which encircles the neck, the constricting force being at least part of the **weight of the body**.



مهم : قوة الضغط هون هي ال *body weight* مو ضغط ايد المعتدي او حبل مثل ما شفنا قبل

Classification of Hanging

1. On the basis of position of the knot:
2. On the basis of degree of suspension:
3. On the basis of intent:

مكانة العقدة

- On the basis of **position of the knot:**

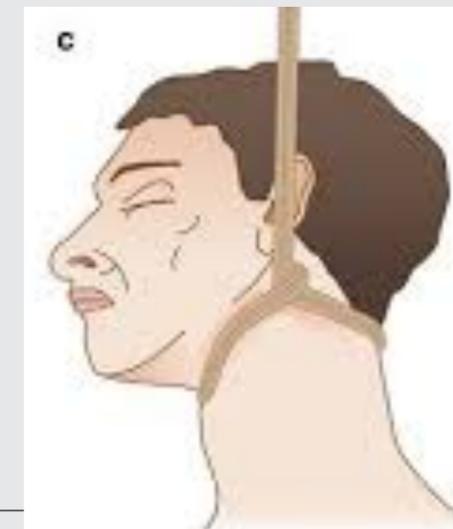
- **Typical hanging:** When the point of suspension is placed **centrally** over the occiput, i.e. the knot is at the nape of neck on the back.



- **Atypical hanging:** Knot of ligature is **anywhere** other than on the occiput.

MC

الاسهل للشخص المنتحر، يربط الحبل من على جنب
postauricular





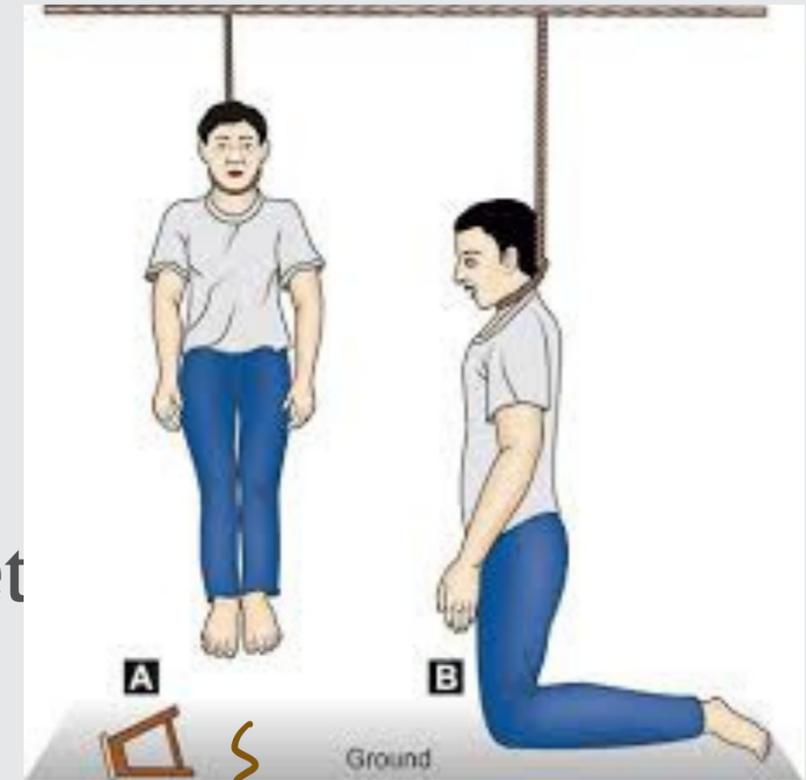
in nape of neck

most common in (postauricular)

Classification of Hanging

On the basis of **degree of suspension**:

- **Complete** hanging:
Body is fully suspended and **no part of body touches the ground. Constricting force is weight of the body.**
- **Incomplete** or partial hanging:
Lower part of the body is touching the ground (toes or feet touching the ground) or in sitting, kneeling, lying down or prone position. Weight of the head acts as the constricting force.

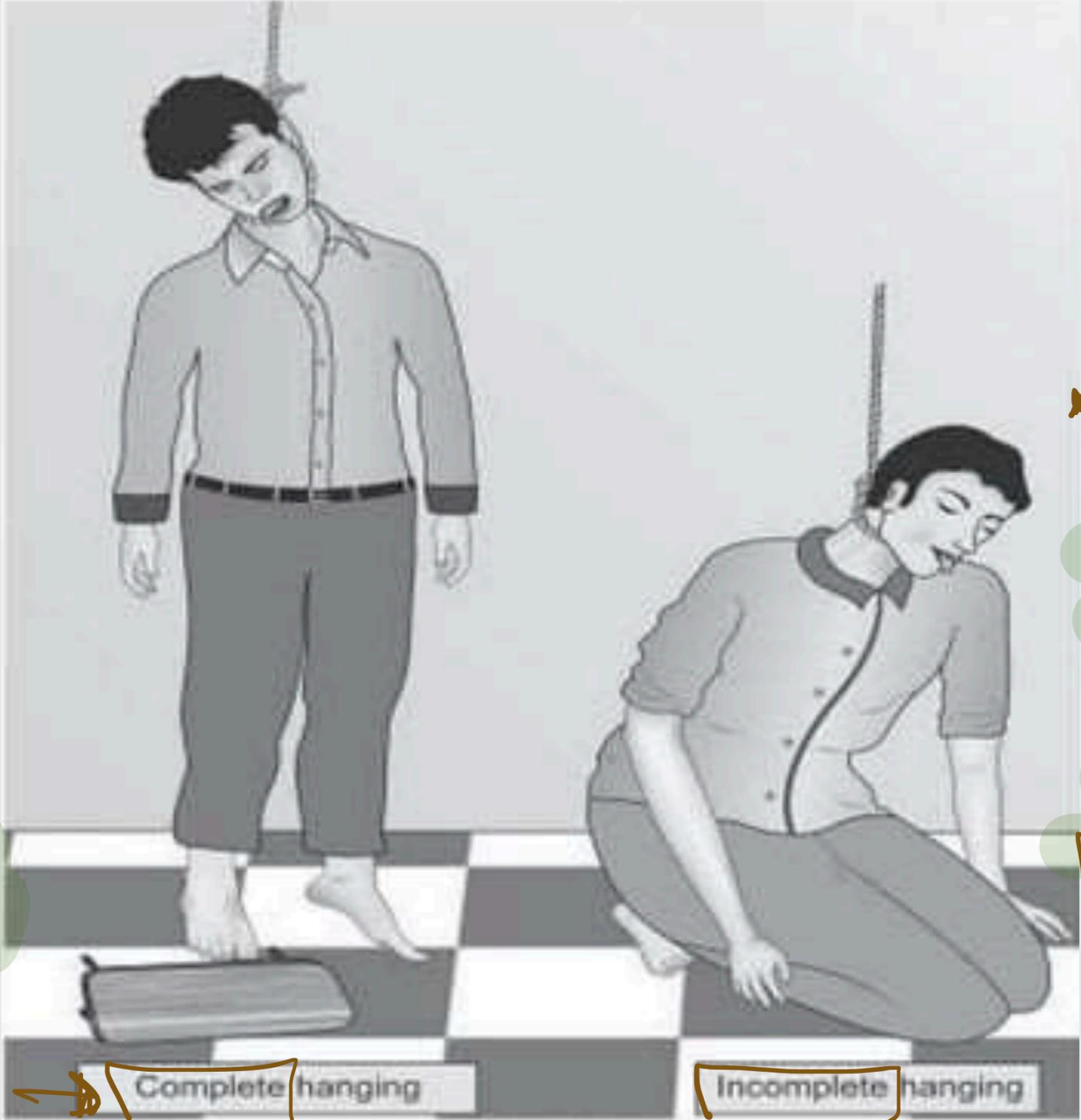


complete

incomplete

واحد الارض
حتى لو أطرافه قدمه
بمنسحب incomplete

• • • • •



* Complet clouser
of artery or vein

* increace of pressere فالتكونه ال
petechial hemorraghe كافرة انويصير

* مع يفقد وعيه بلدايه

+ الاعراض بتظهر زكتر عند ال

incomplete

↓ (أخذ وقته أطول)

* العجل وابتكونه عسكرتعاضاعا العنقه

بكونه في مكانه فيه فرائر منه يتسرب الدم

وهيك فمشانه هيك

Complete hanging

Incomplete hanging

Classification of Hanging

On the basis of **intent**:

* نية القتل

• Suicidal

• Homicidal

Comatose & alcoholism

قوة من الطبيعي أو عدم جسمك من
ويشبهه ويضيقه

ممكن مجموعة يشيلوه ويعلقوه

أولاً هم المظنفة الوحيدة للـ homicidal

• Accidental

• Autoerotic

يوجد درجة معينة من الـ asphyxia

ليعتبر (autoerotic)

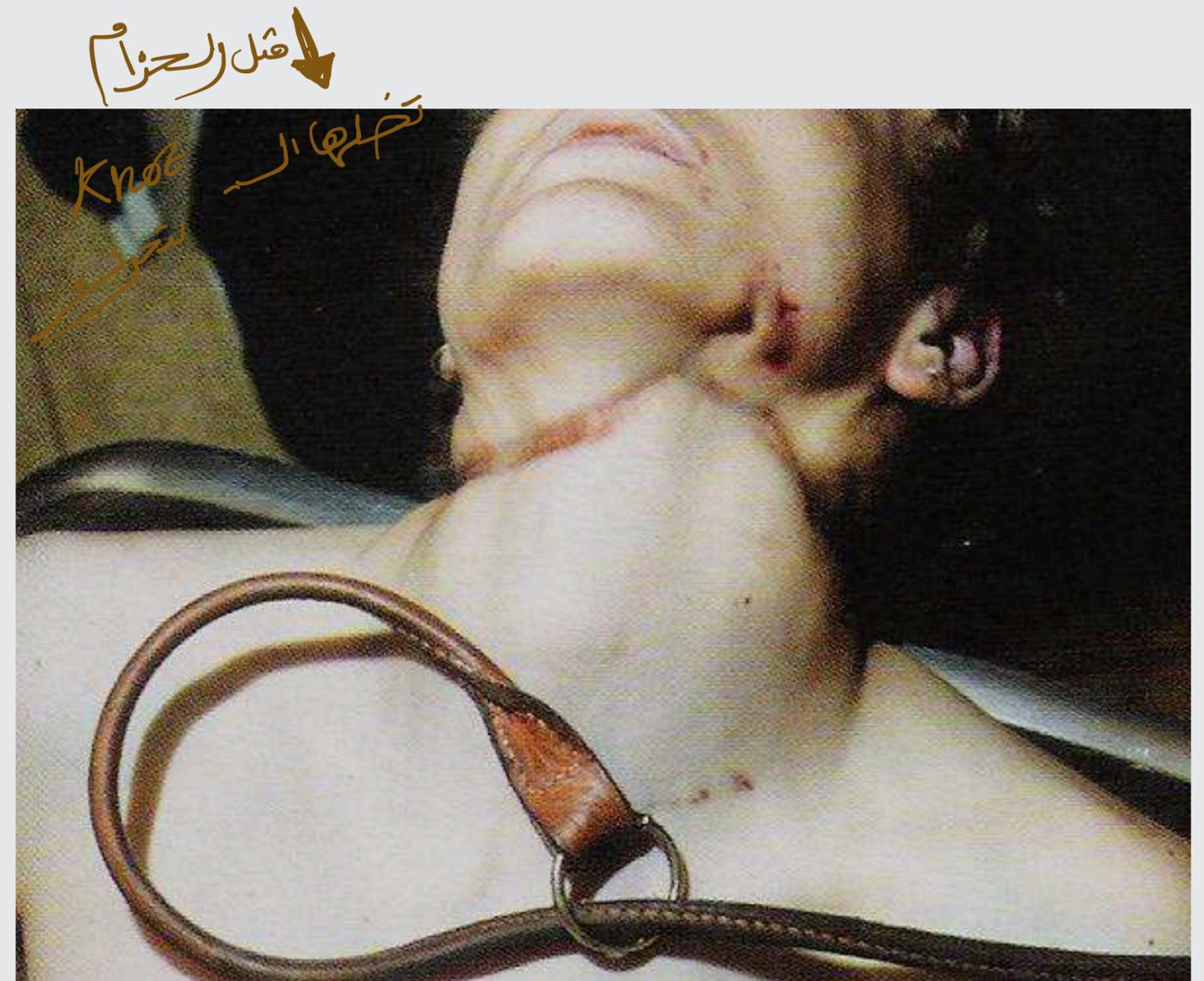
ممكن بالأفلا يظل معلية ويتوقف

• Judicial

• • • • •



Fixed knot and running noose



Cause of Death in Hanging

- **Asphyxia**: Constricting force of ligature causes compressive narrowing of laryngeal and tracheal lumina, leading to asphyxia.
- **Venous congestion**: Jugular veins are blocked by the ligature which results in stoppage of cerebral circulation; occurs if ligature is made up of broad and soft material.
- **Combined asphyxia and venous congestion: Commonest cause.**
- **Cerebral anemia**: It occurs when ligature is made of thin cord.
- **Reflex vagal** inhibition leading to sudden cardiac arrest.
- **Fracture/dislocation of cervical vertebrae**: It is seen **in judicial hanging.**

(C2,3,4)

immediate death

• • • • •

External signs :

- The neck is **stretched** *more in complete* *Specific but not always present*
- The face is **pale** or **bluish swollen** ✓
- **Eyes** : prominent , protruded tongue ✓
- **Froth** at mouth & nostril ✓
- **Hypostasis**: is most marked in the legs, hands and feet. ✓
- **Saliva** may be seen dripping from the mouth
- (It is a **vital sign** and is **present only in hanging** but not in postmortem suspension).



→ Saliva

• • • • •

Ligature →

Stimulation of Salivary gland ✓

للتفريقه اذا الشخص مات وانعلقه ¹ ولا من البداية ² وتعلقه

Internal signs :

حسنا انها موجودة
عنه كل الصلوات

Petechial hemorrhage and **ecchymosis** is of the subcutaneous tissue under the ligature, but never in postmortem suspension.

or bruising
in neck muscle
الأكثر للتقلد

① manual strangulation (throttling)

② ligatur strangulation

③ hanging → لأنه يثقل على ضغط وزنه الجسم → موقوفة الأيدي

- It appear externally as a thin line of **blue color** in the front and along the lower edge of the brown mark.
- Under rope mark: echymosis and tissues are compressed

مهم

Carotid a. : laceration of intima & media It is a valuable sign pointing to **suspension** during life.

نتيجة الـ suspension يكون في transverse لaceration in intima & vessle
هوية التفريقه برضو
عرفه انها hanging

Posterior pharyngeal wall : contusion caused by the backward displacement of the tongue.

Hyoid & thyroid : may fracture

أكثر بال
لأنها جلد
choking
stic sign

contusion
تتبعه على
posterior pharyngeal wall

سأولة لتحت
back word displacement of tongue

lets/diag

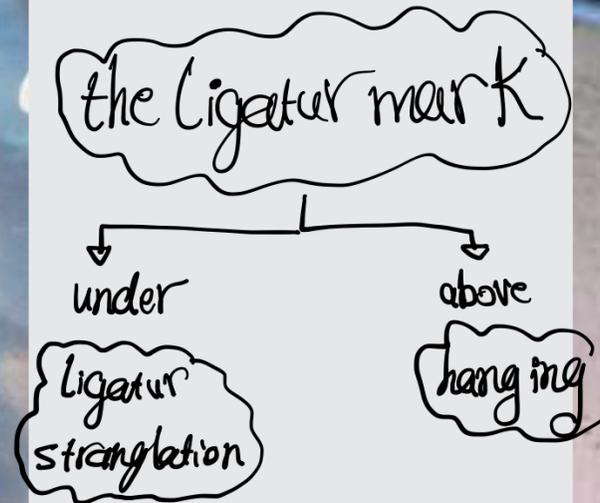
Typical Ligature mark:

- Not running around full circumference of neck (**incomplete.**) ✓
- The mark rises to a peak pointing to this junction (**node**)
- **High:** Is situated above the thyroid cartilage

- **oblique**
- The pattern of the ligature: **Is imprinted on the neck as a pressure abrasion.**
or pattern

• • • • •



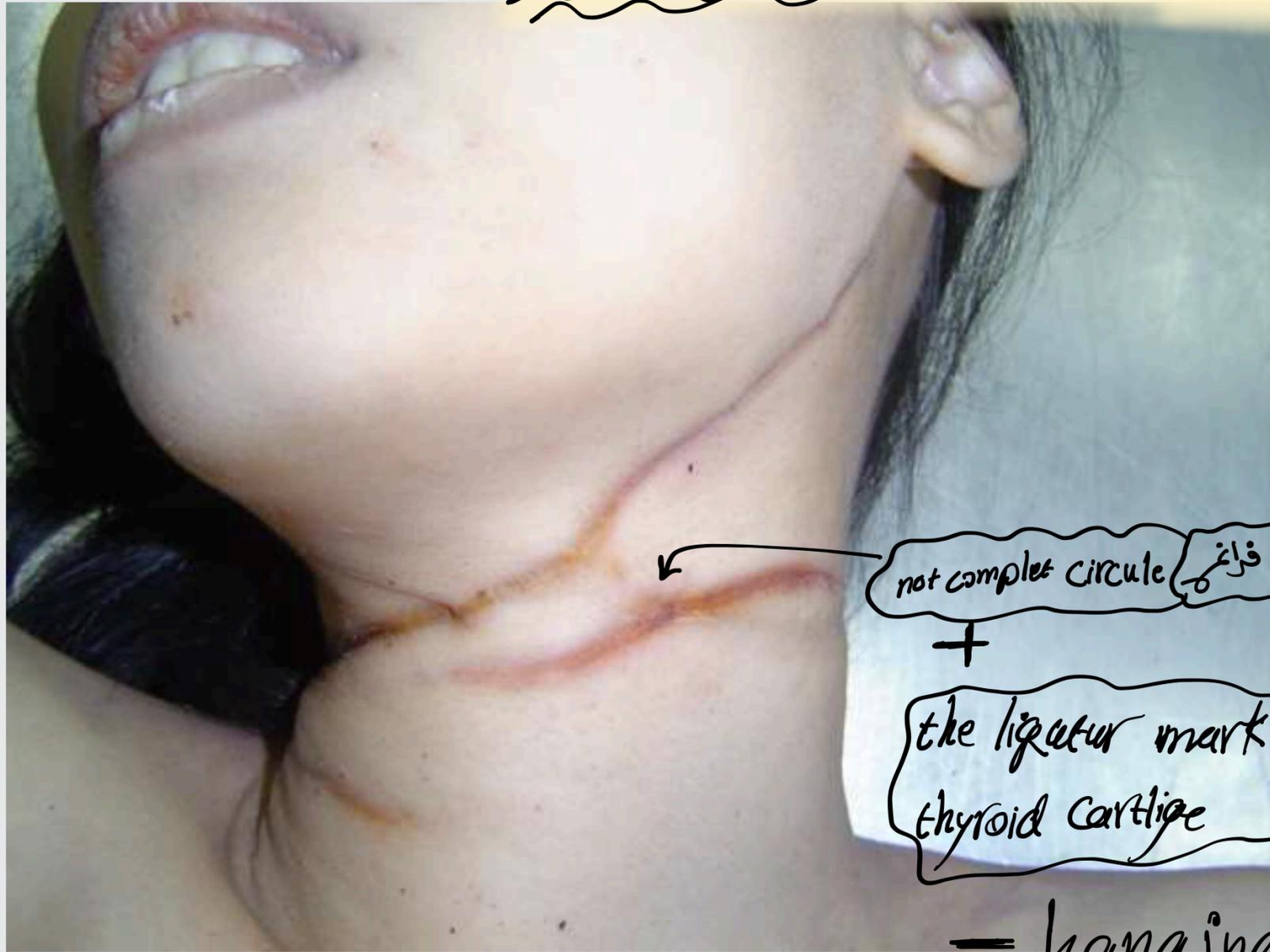


لتفريقهما عن الـ Ligature Strangulation

↑ the mark above thyroid cartilage



الحالة فوق كاسية Susidal



not complet circule انفي فراغ
+
the ligatur mark above
thyroid cartilage
= hanging



Fatal period in Hanging

بجناح لختی یعون

- Usual period is 3-5 min which may extend to 5-8 min of suspension leading to death

↳ *incomplete hanging*

- Death is **immediate**, if cervical vertebrae are **fractured** or if the heart is inhibited.
- "Death is **rapid**, if cause is **asphyxia**."
- Death is **least rapid**, if **coma** is responsible.

Cardiac arrest

Fatal period in Hanging

- Occlusion of **jugular veins** -4-5 lbs of pressure (2kg)
- Occlusion of **carotid arteries** - 1 lbs of pressure (5 kg) وزن الرأس = يكفي ليسكر ال Vein and artery
- Occlusion of **trachea** - 33 lbs of pressure (15 kg)
- Occlusion of **vertebral arteries** - 66 lbs of pressure (30 kg)
- The weight of the **head**, (10 to 12 pounds)(4.5- 5.5 kg) is in fact sufficient to occlude the **carotid arteries**.

Was it Suicidal, homicidal or accidental ?

Suicidal: (most common):

- Circumstantial evidence (history of failure).
- Absence of signs of struggle.
- Presence of signs of previous suicidal attempts.
- Suicidal note, chair, table

على ايده قتلًا

• • • • •

Question

Why does judicial hanging specifically cause fractures at the C3-C4 level, unlike other types of hanging?

1. Due to the long-drop mechanism, which generates high force leading to cervical spine fracture
2. Because the noose is placed lower on the neck compared to other hanging methods
3. Because it causes airway obstruction rather than spinal injury
4. Due to muscle spasms preventing fracture in other types of hanging

.

04 Ligature strangulation

- Violent Asphyxial death caused by constricting the neck by a ligature.
- Mechanism of death :



- Asphyxia: from compression of air passage
- Cerebral congestion or apoplexy
- Reflex vagal inhibition
- Cerebral anoxia

* brain hemorrhage
result of the congestion

Autopsy appearances:

- Externally:

- The face is bluish and congested. The rest of the body is cyanosed.
- The tongue may be protruded, swollen and bitten.
- Bleeding from ears and nose may be seen.

- Ligature mark:

- Shape: as in hanging.
- Situation: At the level of thyroid cartilage or below.
- Symmetrical
- Transverse and complete (this is the usual) ✓

فتش قتل ال
hanging = oblique

Ligature mark:

شفتة حلاوة على الـ neck ← شوفي DDx

A postmortem swelling of the neck associated with exaggeration of:

- skin folds
- clothes worn around the neck may produce depressed marks.
All these look like ligature mark.
Neck dissection can differentiate



Ligature marks of strangulation



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Ligature marks of strangulation



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Was it Suicidal, homicidal or accidental ?

accidental

- Newborns strangled by the umbilical cord. ↗ accidental

حبال العرجية ← Children playing with ropes

أو بالأبواب
أو بالأكياس

- Adults strangled by the necktie caught in moving machinery.

or

← scarf بقلعة التال بالسيارة قتلًا وبخنقها

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Methods used for homicidal strangulation:

in elbow or knee قد المعازبة

- **Mugging**: by compressing the victim's neck against the forearm.
- **Garroting**: attacking the victim from behind and grasping his throat or throwing a ligature over the neck and tightening it quickly.
- **Bansdola**: compressing the neck between 2 sticks



قد قنطرة العلب
كهدك بجمع
بالسلاية التي تعقت

Garroting: was used as a method of execution.



Methods used for homicidal strangulation:

INSUCRIEWE

MUGGING GARROTING BANSDOLA

MUGGING
A forearm á forearm
to compress compress
a victim's neck.

GARROTING
A Garroting; rope or wire
hou stto stranglaj nictim
to strangllg victim.

BANSDOLA
Two storrper niistret
how how tie ioe used
to squeeze the neck.

1. Mugging

2. Garroting

3. Karroting

1.
Use your zatkank to
compress u's neck
from the front

3.
a rope a rope,
tighten to tigzen
around victim's neck

3. Bansdola
Bansdola

Mugging
gers forarmt compress
atigim's neck

2 Garroting
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3 Garroting
Using a rope or rú
a rope or vinit

3
st rope/or wire

3
Two streeze a sticks

Differences between hanging and strangulation:

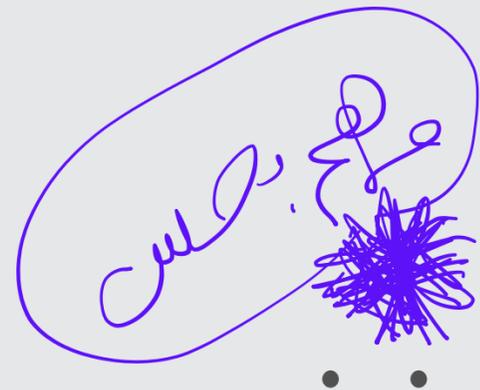
- Rope marks: T., low, Circumstantial ✓
- Signs of resistance ✓
- No stretched neck ✓

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Point	Strangulation	Hanging
Force	From outside on the ligature itself	Weight of the body
Hypostasis	Anywhere	In lower limbs
Blood oozing	From ear, nose, and mouth	Not seen
Neck	Not	Stretched and elongated
Saliva	Not present	Dribbling from the mouth
Ligature mark	Complete, transverse, low	Incomplete, oblique, high
Hyoid bone	Not injured	May be injured
Thyroid cartilage	May be torn	Process of thyroid cartilage is torn
Carotid artery	Not torn	Intima and media are torn
Retropharyngeal bruises	Absent	Present
Spinal column	Not common at all	May be fractured
Signs of resistance	Present	Absent
Circumstances	More homicidal	More suicidal

Post mortem examination :

- Nonspecific **general** pathological changes.
- General external examination:
 - Presence of signs of resistance in the form of finger nails abrasions and contusions.
 - Congested face, protruded eyes, the conjunctivae are congested with subconjunctival hemorrhages. The tongue may be protruded. Fine blood tinged froth sometimes is found at the mouth and nostrils



- Blood oozing from ear, nose and mouth is commonly seen.

Special examination of the neck

External examination :

- **The ligature mark :**

- **Pattern** : pressure abrasion
- **Course** : usually encircles the neck completely and is directed transversely across the neck.
- **Position** : usually present at the level of the thyroid cartilage or below



- **Abrasions and bruises** : are commonly found in the surrounding skin caused by the hands of the assailant or the hands of the victim in an attempt to release the pressure.

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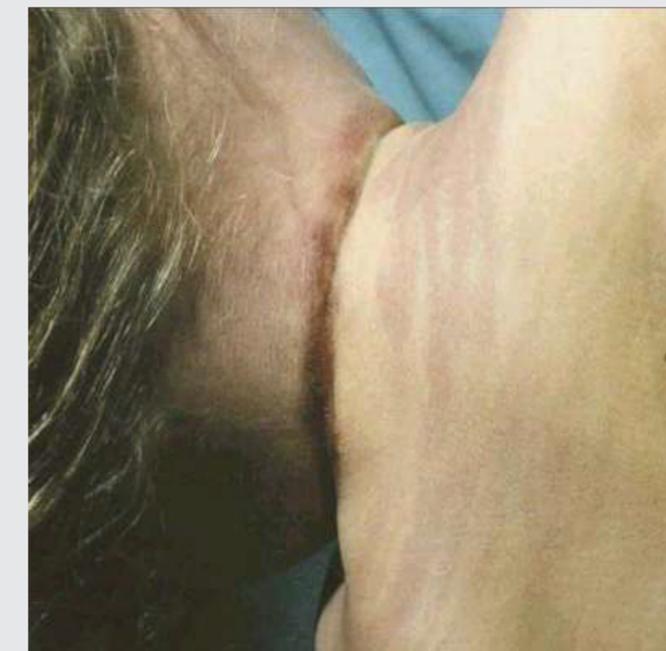


Special examination of the neck

Internal examination :

throttling قتل العنق

- Bruising and laceration of the neck muscles are common



- Fractures of hyoid bone are unusual, while fractures of thyroid cartilage at the level of the ligature may occur unless the victim is young and the cartilage is elastic.

more in hanging

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05 Choking:

* pharynx or larynx

internally

- **Caused by mechanical occlusion** of the air passage **from inside** by foreign material unlike hanging, smothering, strangulation, etc..
- **Mechanism of death:**
Asphyxia: due to either **complete occlusion of air passage** lead to lack of oxygen in the lung or **partial occlusion** that is turn to completed by spasm(reflex), edema(inflamation), mucus secretion(accumulation).

①

②

③

بالجزئية partial
بشمير
complet
بالحالات

• • • • •



Was it Suicidal, homicidal or accidental ?

Accidental (most common)

May arise from:

- Inhalation of ~~irritant~~ fumes cause excessive secretion and edema
- Impaction of foreign material, such as food or denture.
- Inhalation of dust and sand in falling of houses .
- Inhalation of vomit or blood during operations.
- Backward fall of the tongue during an epileptic seizure.
- Café coronary syndrome (sudden death after meal) and should be distinguished from heart attack (cornary attack)
- food bolus in larynx → vagal inhibition cause severe bradycardia or sudden cardiac arrest

نوبات الصرع

عُان هيك نصيله على جنب للشخص الي بظهره نوبة هدي

ياكل بسرعة

بشوفه ال bolus of food لتفرقه عن يمين

What should we do if someone is Choking ?

Partially occlusion stimulate cough

Complete occlusion ... Heimlich maneuver (adult,child,baby)



<https://youtu.be/CsMfu8luvgc?si=UuvG-GluViCSHQvE>

Partially occlusion stimulate cough

Complete occlusion Heimlich maneuver (adult,child,baby)



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Postmortem Findings :

- There is severe congestion of face due to struggle to get foreign body out .
- Very clear signs of general asphyxia (cyanosis, periorbital hemorrhages)

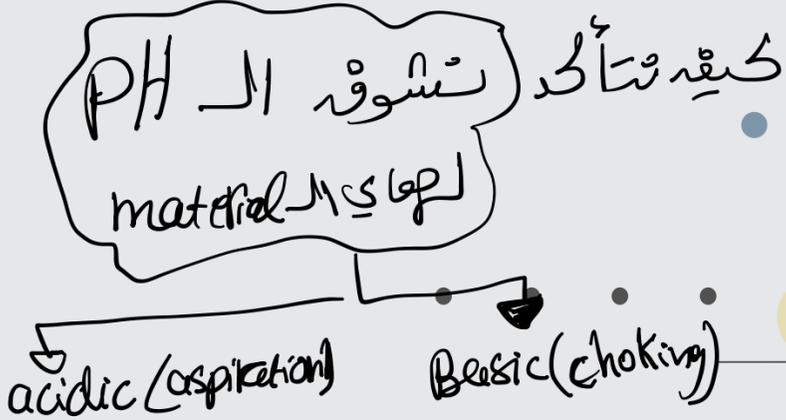
↑ prominent ↓

- **Local examination :**

- **Bruises and abrasions of the air passage** are found especially if the foreign body is a solid one,

- **presence of foreign body is confirmatory evidence.** in airway passage

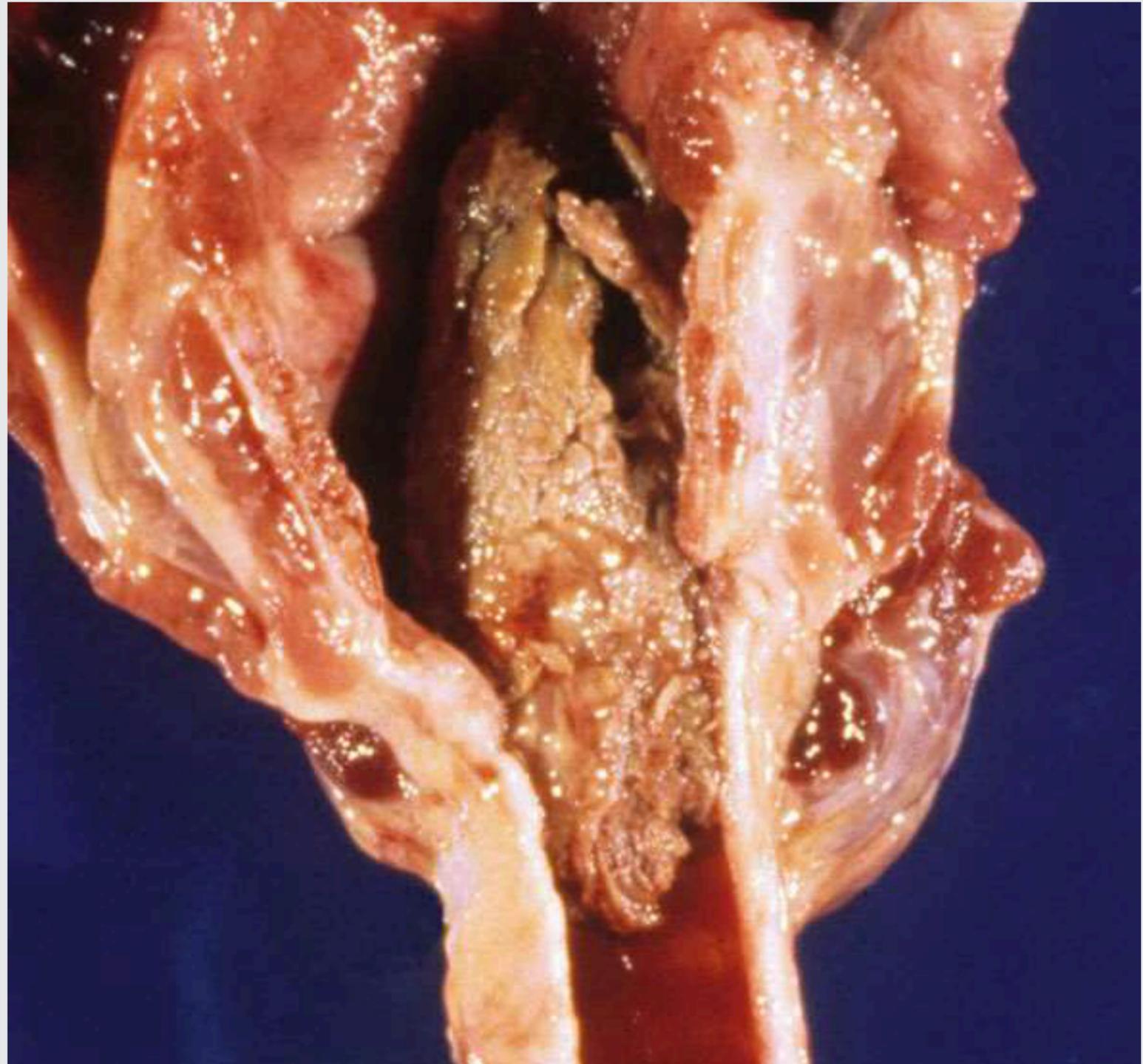
- In **delayed death**, pathological changes in the lungs will be apparent e.g. consolidation, lung abscess etc.. especially in infant with milk aspiration.



بنتا کرد ، پس ممکن است که aspiration به عنوان سبب وفات ناشی ← کفیه نتا کرد

Choking :

A choking death in an intoxicated individual, with occlusion of the larynx and upper trachea by a large fragment of meat



06. Traumatic asphyxia (Crush asphyxia)

- Resulting from trauma to the chest or pressure on the chest and abdomen which prevent respiratory movements
- e.g. run-over car accident → fracture of ribs → restriction of respiratory movements from the severe pain occurring during respiration

Pressure on the chest and abdomen due to:

- Burial in earth following house collapse
-
- Crushing by a crowd, as in case of a fire

with or without
fractur
عادي

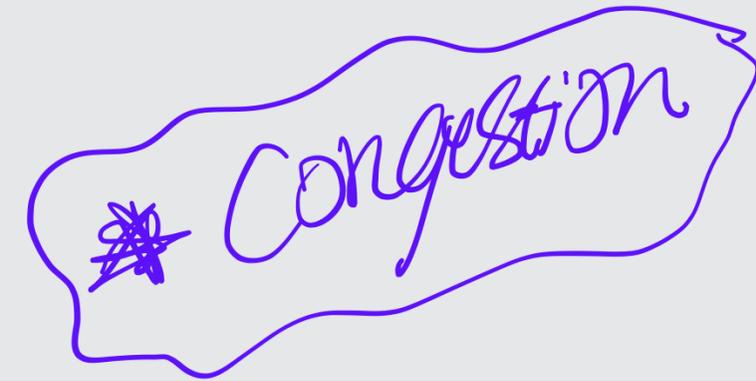
Postmortem Findings :

congested , cyanotic face and neck due to **venous blood being blocked from returning to the chest.**

skin found bruising , abrasion .

under skin found fracture of ribs, sternum.

muscle contusion , heart or lung laceration.



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THANKS

Do you have any questions?

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17) All are signs in of hanging except?

- a. Transverse
- b. Incomplete
- c. Patterned ligature
- d. Situated above thyroid

32- Causes of death in hanging include all the following EXCEPT :

- a) Cerebral anemia.
- b) Reflex vagal inhibition.
- c) Laryngeal spasm. XXX
- d) Fracture first cervical vertebra.
- e) Pushing the tongue base against the posterior pharyngeal wall.

17. Rope marks in strangulation are

- a) Less marked than in hanging. XXX
- b) Oblique symmetrical.
- c) Transverse asymmetrical
- d) High in the neck.
- e) Incomplete.

5. sure sign of antemortem hanging: saliva dribbling

34- The following are signs of postmortem suspension except:

- a. Cause of death is other than hanging.
- b. History of threatening by enemies.
- c. Hypostasis in the back.
- d. Presence of signs of struggle.
- e. Dribbling of saliva. XXX

6- one is false regarding sign:



- A) slower the death, less prominent appearance
- B) obvious in fair skin ✓
- C) can be seen in vesicra and pleura ✓
- D) can be caused by another pathologic non-asphyxial causes ✓
- E) its mostly specific for manual strangulation ✓

Answer:

7- this finding seen with other sign mentioned (petechial hemorrhage), mechanism of these signs?



- A) compression ✓
- B) cut
- C) non of the above

Answer: A

8- True about the type of asphyxis:



- A) hyoid bone fracture is common with hanging ✗
- B) ligature mark seen in n strangulation as homicidal manner ✓
- C) damage and contused to underlying tissue ✓
- D) commonly seen in manual strangulation ✗

Answer:

O2 dissociation curve shifted to the left

Answer: C

11- Choose the correct answer :

Hyoid bone fracture is most likely involved



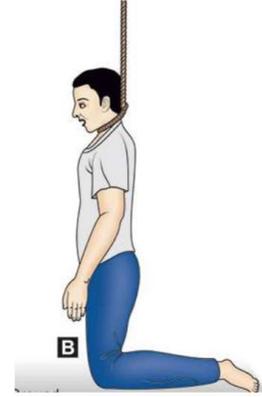
Mugging ✓



hangging ✓

صورة تقريبية بس ما كانوا
كل رجليه عالارض كانوا يا
دوب الاصابع

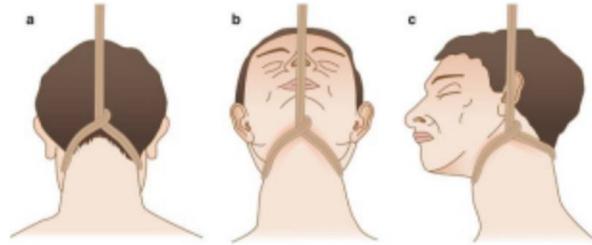
Typical incomplete hanging



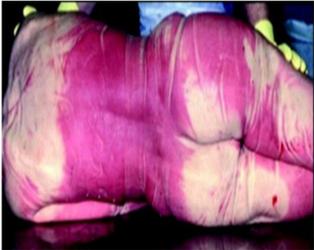
incomplete typical hanging



3. atypical hanging



Hypostasis on back



الْحَمْدُ لِلَّهِ