



Neonaticide Infanticide

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Neonaticide

- the killing of young infant under 1 month of age (28 or 30 days)
- the unique nature of the immediate postpartum period
- the typical features

Neonaticide

- Spartans of Ancient Greece
- Inuits (nomadic groups)
- smothered, drowned, abandoned to die, animal attack
- reduction of population in times of need, the removal of physically or intellectually impaired infants, female infants

Neonaticide

- killing of a newborn baby by the mother
- young, poor, unmarried woman, low level of education
- mental illness
- Expert in psychiatry and pediatrics

- Czech republic....
- **Decreased criminal responsibility** of mother due to the mental condition related to the delivery of the baby (3-8 years)
- When the mother starts taking care of the baby (bath, clothing, etc) or sleeps or till 24 hours – the period for neonaticide ends

Murder

- **Intentional** killing of another human
- Punishment – Czech republic
 - Imprisonment for 10-18 years
 - Imprisonment for 15 years till death
 - 2 or more people
 - Pregnant woman
 - Child under 15 years of age
 - Person in authority
 - Medical practitioner in duty
 - Due to ethnical, political, religious reasons
 - Repeatedly
 - Brutal or tormenting act
 - In intention of covering up for another criminals doings

Infanticide

- Infanticide Acts (England 1922)
- “Where woman by a willful act of omission or commission, causes the death of her child being under the age of **twelve months**, but at the time the balance of her mind was disturbed by the effects of childbirth or lactation, she may be dealt with as if she had committed manslaughter.”
- Killing of a child that is under the age of 12 months.

Neonaticide

- Scene investigation
- The place of delivery
- Hiding place for the body
- Linking particular child and mother (material used to wrap the body, injuries...weapons, placenta usually disposed separately)

Neonaticide

Autopsy

- Gestational age
- Careful measurements
- Radiological examination...ossification sites

Gestational age

Estimation of fetal maturity

- 4 weeks – 1.25 cm, showing limb buds, enveloped in villous chorion
- 12 weeks – 9 cm long, nails formed on digits, placenta well formed
lanugo all over body
- 20 weeks – 18–25 cm, weight 350–450 g, hair on head
- 24 weeks – 30 cm crown–heel, vernix on skin
- 28 weeks – 35 cm crown–heel, 25 cm crown–rump, weight
900–1400 g
- 32 weeks – 40 cm crown–heel, weight 1500–2000 g
- 36 weeks – 45 cm crown–heel, weight 2200 g
- 40 weeks (full term) – 48–52 cm crown–heel, 28–32 cm crown – rump, 33–
38 cm head circumference, lanugo now absent or present only over
shoulders, head hair up to 2–3 cm long, testes palpable in scrotum/vulval
labia close the vaginal opening, dark meconium in large intestine

Neonaticide

- Vernix caseosa, blood...recent delivery x washing before disposal
- Injuries
- drowning and smothering....minimal findings
- **scratch marks or ligature mark on the neck**



Neonaticide

- Examination of the placenta
- 54 – 61 cm
- ends of the cord

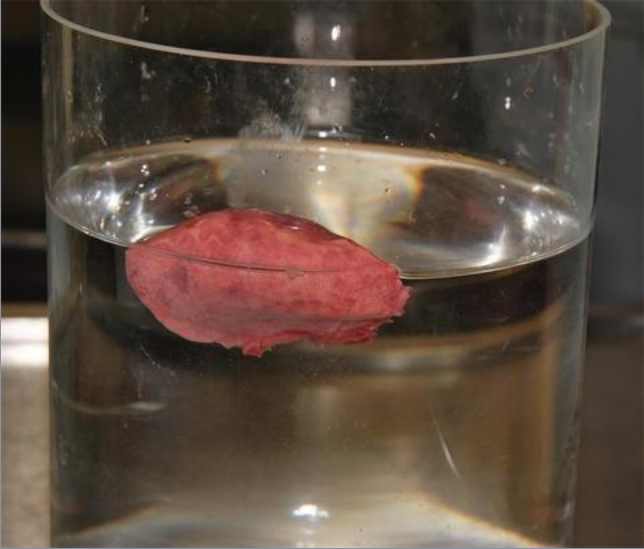
Neonaticide

- only a life born baby can be the victim
- separate existence...complete expulsion
- signs of life: breathing

vital reaction in the tissues

evidence of feeding

Neonaticide



- Determine if newborn was viable x not stillborn
- Maceration
- Floating test of lungs and stomach
- Vital signs in the cord
- Food in the stomach



maceration

- reddening
- slippage
- peeling of the skin after 12 hours
- purple discoloration and blister formation after 48 hours
- joints become hypermobile

over-riding
skull plates

partial collapse
of the head



Spalding's sign
-
radiography

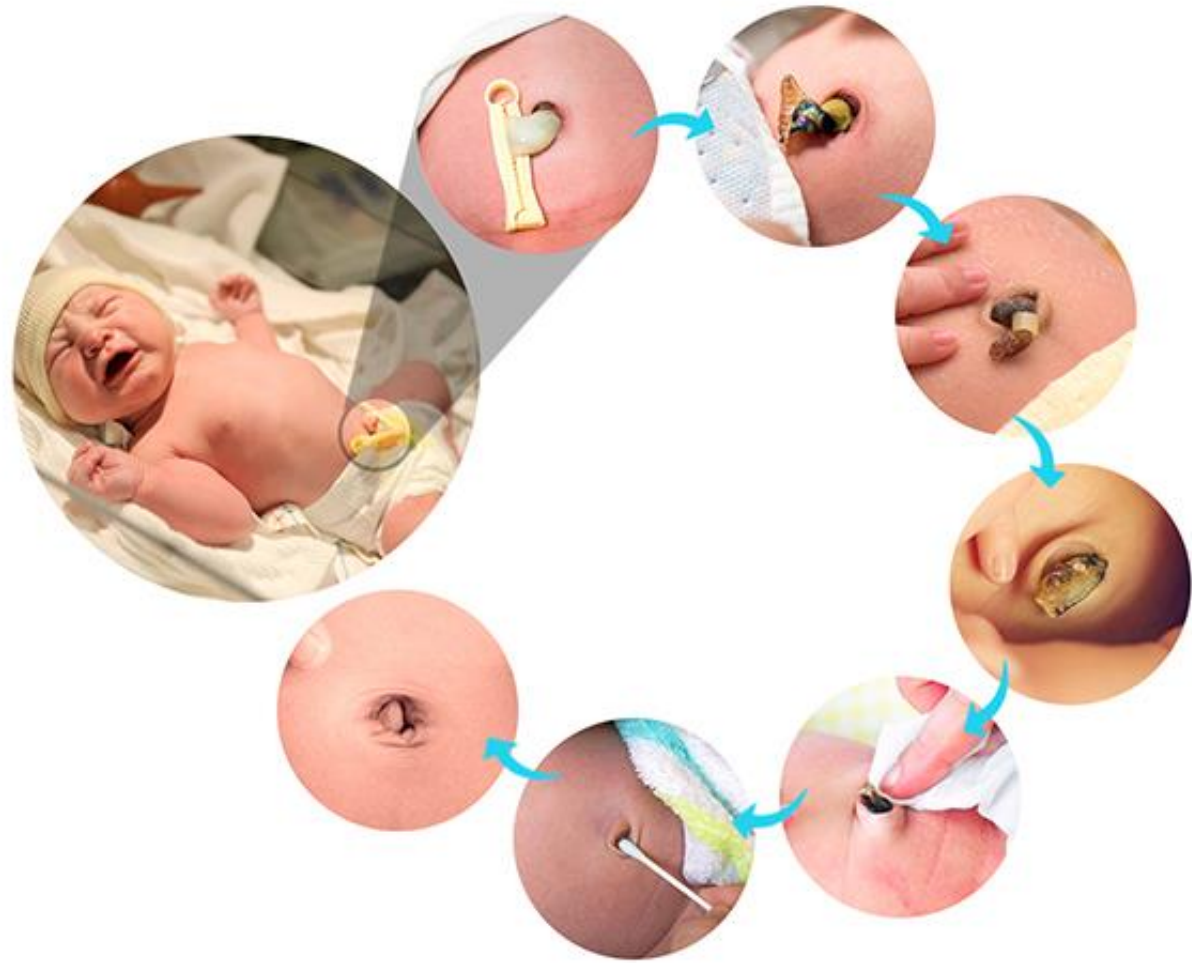


Flotation test

- If baby breathed (and swallowed air) – lungs and stomach will float on the water,
- false positive - useless in a state of putrefaction, previous CPR,
- false negative – weak respiratory efforts, but live-born,
- radiographs – degree of pulmonary inflation



Vital signs in the cord



+ histological examination

Still- births x abortion

- Above 28 weeks or 1000 g
- Above 22 weeks, more than 500 g, length more than 25 cm (CR)

Mechanisms

- Active
 - Smothering
 - Manual strangulation
 - Ligature strangulation
 - Drowning
- Passive
 - Hypothermia
 - Suffocating in pillows

CAN

CAN

- Child abuse and neglect syndrome
- **Physical**
- Emotional
- Sexual

CAN

- Neglect - is a pattern of failing to provide a child's basic needs, which include adequate food, clothing, hygiene, or supervision.

Physical abuse

- “battered child”, “non-accidental injury in childhood”
- 10% risk of having **fatal injuries (more than 2/3 under 3 years)**
- 60% risk of repeated abuse

John Caffey

- american pediatrician and radiologist
- the father of pediatric radiology
- Shaken baby syndrome



CAFFEY J. Multiple fractures in the long bones of infants suffering from chronic subdural hematoma. Am J Roentgenol Radium Ther. 1946 Aug;56(2):163-73. PMID: 20995763.

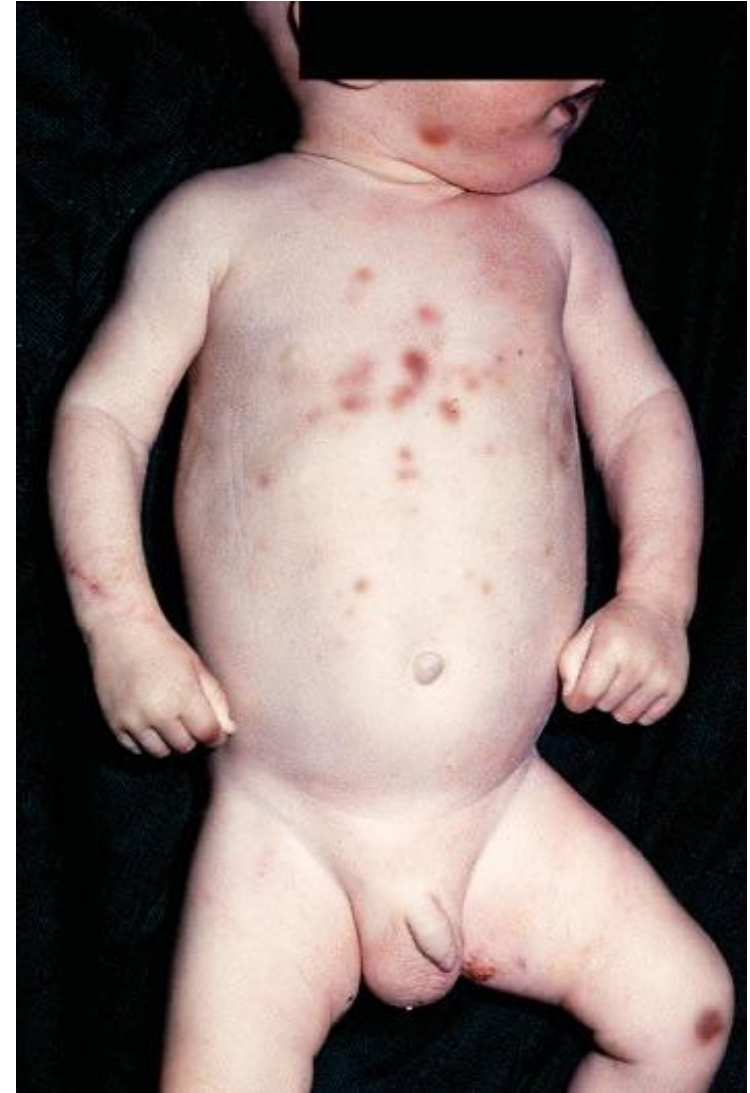
- mainly manually – hitting, beating with the hands, shaking, throwing, dropping
- less often burning, suffocation
- The most common mode of death **head injury**, 2nd... rupture of abdominal organ

Physical abuse

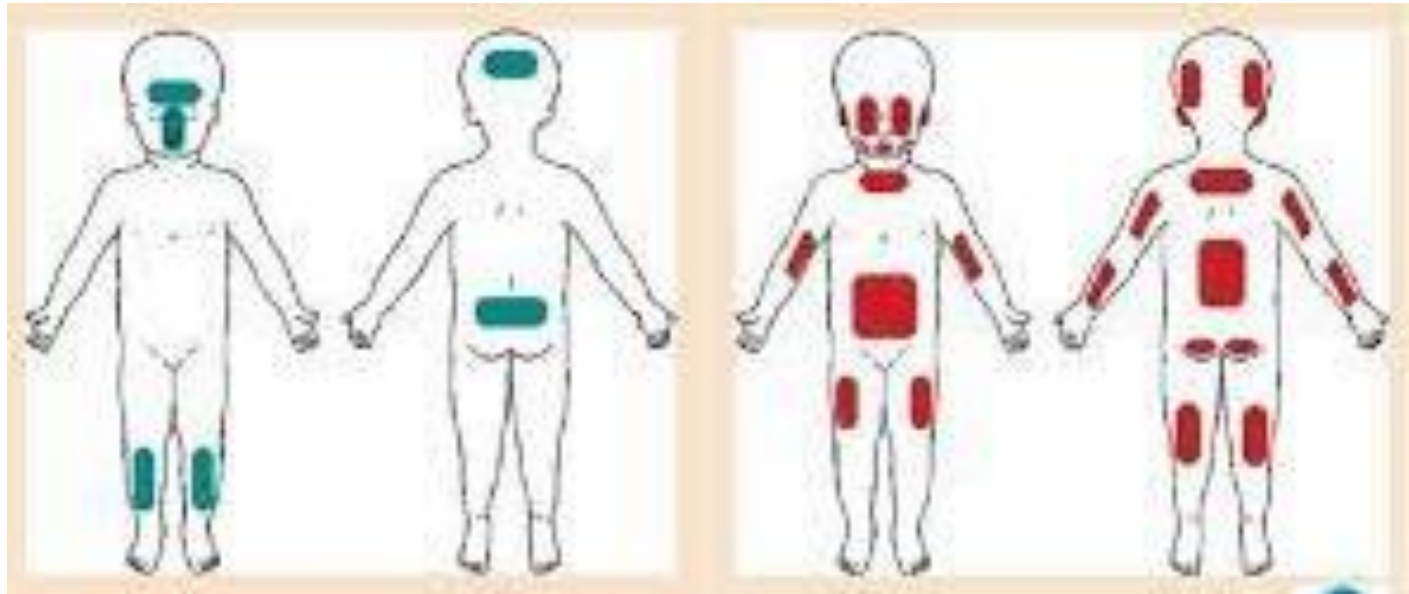
- **Bruising**

- Cameron, Johnson, Camps (1966)
- “ the skin and bones tell a story which the child is either too young or too frightened to tell”
- Around the limbs
- The buttocks
- The face
- On the chest, abdomen and neck – “sixpenny bruises”

Sixpenny bruises



accidental x
abusive









- The observed age of the bruise may be different with the history given by a parent – suspicion!
- Bruises of different ages
- Bruise with **yellow coloration** ... more than 18 hours

- Dating of the briuse
- At first – **Red**
- Few hours to 3 days – **Blue Purple**
- 4th day – **Brownish x Bluish black** (methemoglobin)
- 5-6 Days – **Greenish** (biliverdin)
- 7-12 days – **Yellow** (bilirubin)
- 2 weeks – Normal

- **Skeletal damage – fractures**

- multiplicity and variation in fracture age

- **Fractures of the skull**

- Less mechanical force is needed x adults
- Occipitoparietal area (frontal bone less often involved)
- Widely separated, depressed

- Intracranial haemorrhage (subdural)
- Brain damage
- (Also without fractures)



- Accident – simple fractures
- Abuse – serious intracranial damage
- bruises under the scalp

- Fall from 0,9 m is enough

- **Limb fractures**

- indirect mechanism (twisting)

- metaphysis, epiphysis – avulsion of metaphysis, metaphyseal corner fractures - classic metaphyseal lesion (CML)

- diaphysis – spiral fractures of long bones

- damage of epiphyseal cartilage may cause growth defects

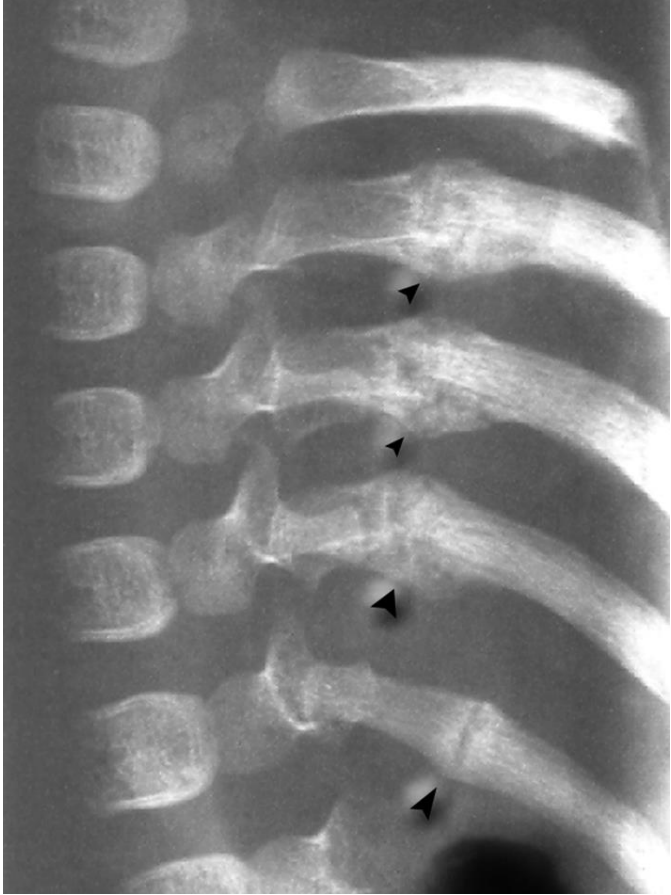
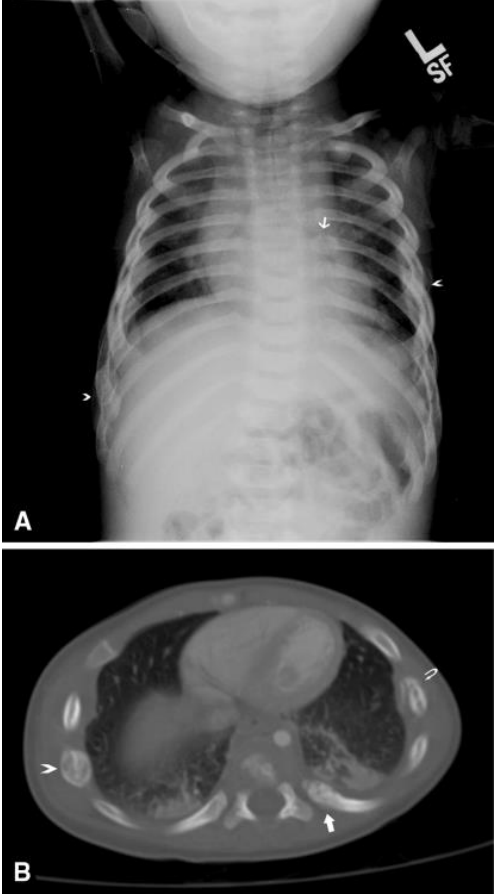
CML



- **Damage to the chest cage**
- Accidental very uncommon
- 10 days ...callus
- Clavicle – swinging by an arm

Posteromedial Rib Fractures

“string of beads” appearance



- **Head injuries**

- the most common cause of death
- neurological impairment

- subdural haemorrhage
- **direct impact** (blow, fall) – 50 times greater forces x **shaking**

- contusion & subarachnoid haemorrhage
- contre-coup lesions aren't as common as in adults

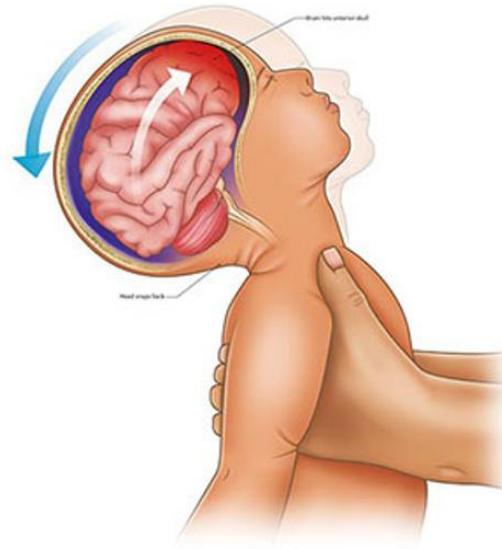
Shaken baby syndrome/ Abusive head trauma

SHAKEN BABY SYNDROME

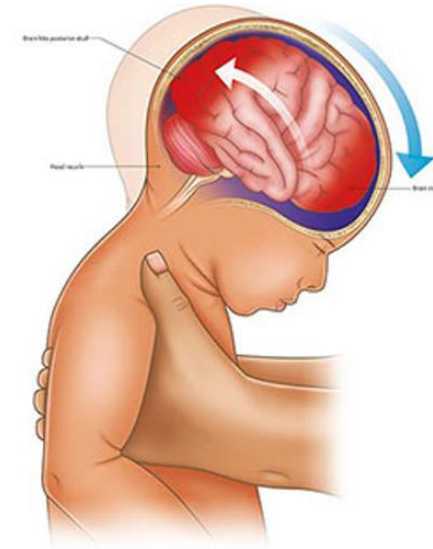
Shaken Baby Syndrome (SBS) is a serious form of abuse where a baby is violently shaken, forcefully moving their fragile brain back and forth in the skull. It is entirely preventable and happens when a caretaker or parent shakes their baby due to frustration and can happen in as little as seconds. It can cause long-lasting brain damage, blindness, motor dysfunction and even death.

Symptoms of SBS include difficulty sleeping, body tremors, difficulty eating, skin discoloration and change in sleeping pattern. More severe symptoms include unresponsiveness, seizures, coma, difficulty breathing, and death. Conditions that indicate a baby has suffered shaken baby syndrome include encephalopathy (swelling), subdural haemorrhage (bleeding) and retinal haemorrhage.

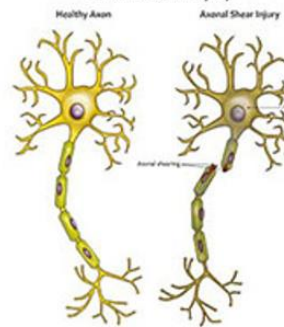
Hyperextension



Hyperflexion

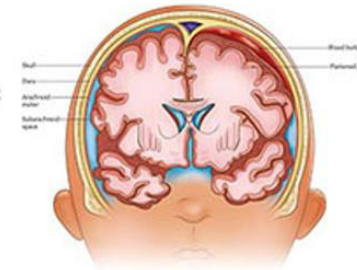


Diffuse Axonal Injury



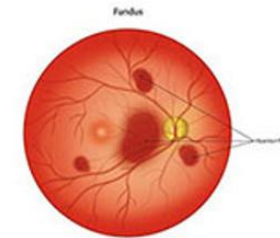
Diffuse axonal injury (DAI) is the tearing of the brain's nerve fibres (axons), causing brain cell death. This occurs as a result of the brain rapidly shaking or rotating inside the skull, caused by forces such as vigorous shaking when the axons tear. DAI usually results in the loss of consciousness, vomiting, fatigue and coma.

Subdural Haematoma



Severe shaking can cause a subdural haematoma, blood pooling between the brain's surface and surrounding membrane (dura). The build-up of blood puts pressure on the baby's brain and can cause symptoms such as severe headaches, seizures and even death.

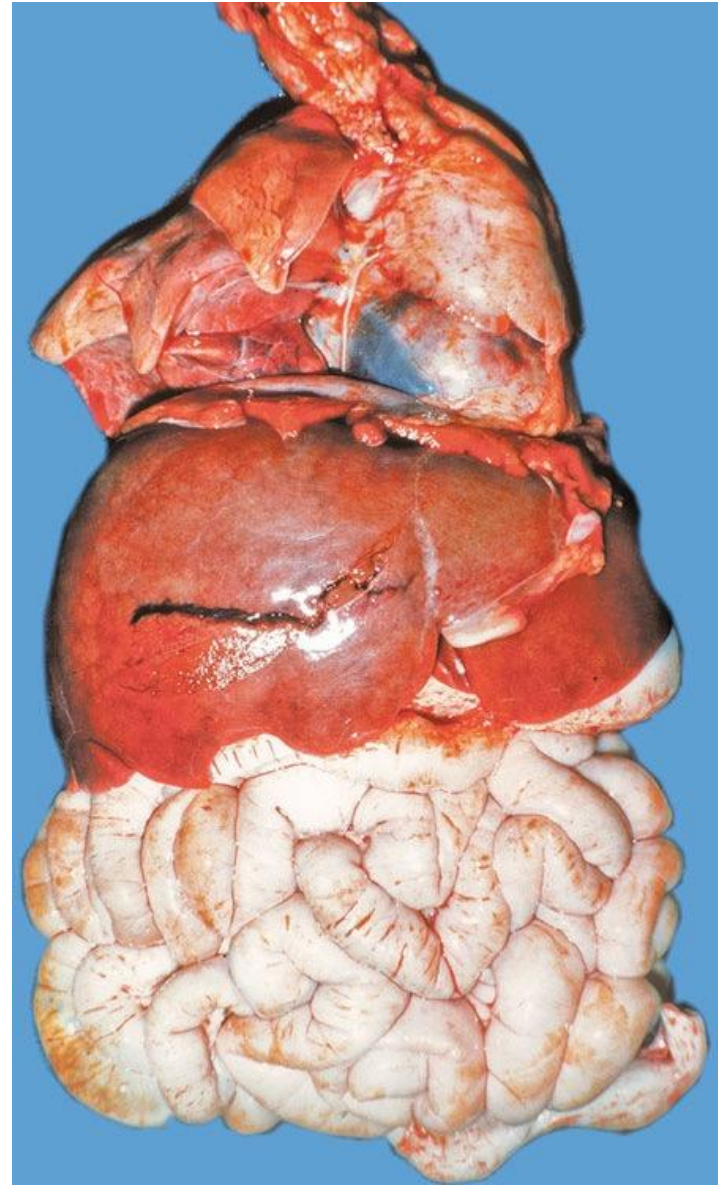
Retinal Haemorrhage



Shaken baby syndrome can cause retinal haemorrhage, the bleeding of the small blood vessels of the retina. This usually manifests as multi-layered haemorrhages in both of the eyes. This is a clear sign that a baby has suffered from physical abuse. Severe retinal haemorrhage can lead to vision problems such as lazy eye (amblyopia) and blind spots.

- **Visceral injury**

- Direct punching
- The liver – deep tear
- The small intestine – 2nd part of duodenum



- **Damage to eyes, ears and mouth**

- Black eye

- Shaking or direct violence to the head ... bleeding into vitreous humour, dislocation of the lens, retinal detachment, retinal haemorrhages

- Torn frenulum beneath the upper lip (patognomonic) – slap, the forcible entry of feeding bottle

- The teeth

- **Burns in child abuse**

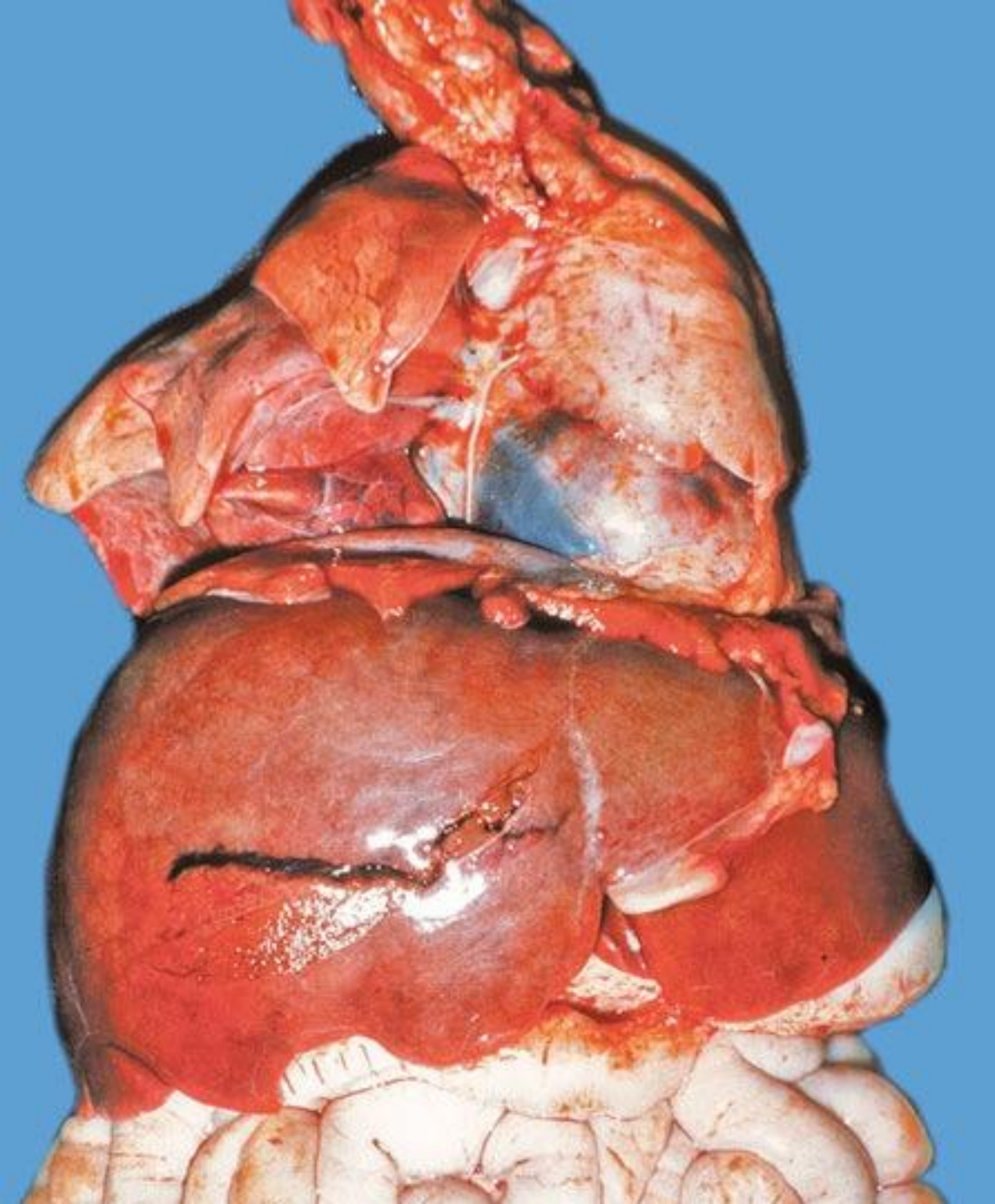
- Scalds x burns

- Cigarette burn – circular, triangular

- Red...pink...silvery







5

semicircles

- **Other injuries**

- Epilation

- Pinch marks

Thank you for your attention!