1. Cause:
   - Aneurysm
   - Hypertension
   - Atherosclerosis
   - Atrial fibrillation
   - Atrial flutter

2. Characteristics:
   - Primitive conduction
   - No tight seal
   - Improvised parts
   - Atypical internal ballistics
   - Atypical wound ballistics
   - Bullets are not stabilized when they leave the gun

True/False:
1. When a girl is examined for possible child sexual abuse, she should be examined in more than one position TRUE
2. One of the most common causes of immediate death after acute myocardial infarction is rupture of the necrotic muscle with cardiac tamponade FALSE
3. An exit wound is always larger than an entrance wound FALSE
4. Measuring the hymenal opening is very important in the examination of the sexually abused child FALSE
5. Hypertrophy (obstructive) cardiomyopathy is a hereditary disease which presents with concentric hypertrophy of the left ventricle of the heart FALSE
6. Ring fractures of the skull base are typically seen in cases of axial hyperextension injuries TRUE

Causes of Sudden Death

<table>
<thead>
<tr>
<th>CNS</th>
<th>Respiratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myocardial Infarction</td>
<td>Ruptured berry aneurysm</td>
</tr>
<tr>
<td>Complications of acute myocardial infarction</td>
<td>Cerebral haemorrhage</td>
</tr>
<tr>
<td>Insufficiency</td>
<td>Cerebral thrombosis or infarction</td>
</tr>
<tr>
<td>Cardiac arrhythmias</td>
<td>Epilepsy</td>
</tr>
<tr>
<td>Rupture of ventricle post-infarc</td>
<td></td>
</tr>
<tr>
<td>Myocardial fibrosis post-infarc</td>
<td></td>
</tr>
<tr>
<td>Papillary muscle rupture</td>
<td></td>
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<tr>
<td>Hypertensive heart disease - LVH</td>
<td></td>
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<tr>
<td>Aortic stenosis</td>
<td></td>
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<tr>
<td>Atrial myxoma</td>
<td></td>
</tr>
<tr>
<td>Degeneration</td>
<td></td>
</tr>
<tr>
<td>Myocarditis</td>
<td></td>
</tr>
<tr>
<td>Aortic aneurysm</td>
<td></td>
</tr>
<tr>
<td>GI tract</td>
<td>Gynaecology</td>
</tr>
<tr>
<td>Ruptured enteric ulcer</td>
<td></td>
</tr>
<tr>
<td>Ischaemic gangrene due to strangulated hernias, torsion, volvulus</td>
<td></td>
</tr>
</tbody>
</table>

Slide 4:
1. Gunshot, exit defect skull
2. Blown-out, outward blowing Loose bone fragments Decimated lead alloy projectile

Slide 5:
1. Intracranial pressure with tentorial herniation and occipital lobe Infarction
2. Indentation of brainstem caused by pressure of loose edge of tentorium cerebelli (due to ipsilateral supratentorial pressure increase), with subsequent neurologica loss on same side as primary lesion

Slide 6:
1. Organ: Heart
2. Diagnosis: Myocarditis
3. Name and other non-atherosclerotic cardiac causes of sudden cardiac death:
   - Congenital structural or coronary arterial abnormalities
   - Aortic valve stenosis
   - Mitral valve prolapse
   - Myocarditis
   - Dilated or hypertrophic cardiomyopathy
   - Pulmonary hypertension
   - Hereditary or acquired abnormalities of the cardiac conduction system
   - Isolated hypertrophy, hypertensive or unknown cause (cardiac mass is an independent risk factor for cardiac death, thus some young patients who die suddenly, including athletes, have hypertensive hypertrophy or unexplained cardiac mass as the only finding)

Slide 7:
- Fallopian tube
- Ruptured ectopic pregnancy
- History, S-BHO, History
- Hypovolemic shock
Skyfly / Slide 1: Hout 236 + 176 (uu 416 + 417)

a) Primære breinstamabloeding
b) - aneurisma
- hypertensie
- ateroskleroze
- arterioveneuse malformasie / anomalie

Skyfly / Slide 2: Stomp 2

Patroonskaafwond / Patterned abrasion
Krapwonde / Scratches
Wrywingskaafwond / Friction abrasion
Mielinvreling / Ant lesions
Impressie (afdruk) skafwond / Impression (imprint) abrasion
Skulwonde / Brush burns.

Skyfly / Slide 3: Ondersoekkamer / Examination room

1. Daar is baie verskillende vorms van misbruik, nie net penetrasi nie, maar different forms of abuse apart from penetration.
2. Die hymenale weefsel is rekbaar / The hymenal tissue is elastic.
3. Die ondersoek vind plaas dikwels lank nadat oppervlakkige skene reeds genees is / The examination often takes place a long time after the abuse.
4. Oppervlakkige skene genees teen 'n tempo van 6mm/24h / Superficial tears heal at a pace of 6mm/24h.
5. Kinders kan saad deel die vir 'n ondersoek, en sodoende is daar saad seamen teenwoordig / Children seldom come for an examination immediately, therefore semen is seldom found.
6. Oortreders mag erektilie disfunksie hê / Perpetrators may have erectile dysfunction.
7. Oortreders behou graag hulle slagoffers en gaan dus versiglik te werk om nie beseerings te veroorsaak nie / Perpetrators choose to keep their victims and will therefore be careful not to cause injuries.

Skyfly / Slide 4: Sklet 264

a) Skletwond - Uitgangsdefek skedel / Gunshot - Exit defect skull
b) Uitgeblaasde, uitwaaiende defek / blown-out, outward bevalling
   Los beanfragmente / loose bone fragments
   Vervormde loodliggingsproyectiel / deformed lead alloy projectile

Skyfly / Slide 5: (Hoof 151)

a) ↑ intrakraniële druk met tenoritale herniasie en oksipitaalkwab infarkse /
† Intracranial pressure with tentorial herniation and occipital lobe infarction.

b) Indentatie aan breinstem agt drukking van vry rand van tentorium cerebelli (weens ipsilaterale supratentoriële drukverhoging), met gevolglike neurologiese uitval aan selfde kant as primêre lesel / Indentation of brainsstem caused by pressure of free edge of tentorium cerebelli (due to ipsilateral supratentorial pressure increase), with subsequent neurological loss on same side as primary lesion.

\[ \text{Skyfile Slide 6: (ks 25718)} \]

a) Orgaan: Hart / Organ: Heart.

\[ \left( \frac{1}{2} \right) \]

b) Diagnose: Miocarditis / Diagnosis: Myocarditis

\[ \left( \frac{1}{2} \right) \]

c) Noem 4 ander nie aterosklerotielse kardiale oorsake van skielike kardiale sterfte:

- Kongenitale strukturele koronêre arteriële abnormaliteite
- Aortaklep stenose
- Mitrealklep prolaps
- Miocarditis
- Geadilateerde of hipertrofielse kardiomiopatie
- Pulmonêre hipertensie
- Ootoflikse of verwonwe abnormaliteite van die kardiale gelsidings systeem
- Geisoleerde hipertrofie, hipertensief of onbekende oorsae

(Verhoogde kardiale massa is 'n onakhanklike risiko factor van kardiale sterfte; dus sommige jong pasiënte wat skielik sterf, insluitend atlete, het hipertensiwe hipertrofie of onbekende verhoogde kardiale massa as enigste bevinding)

Name 4 other nonatherosclerotic cardiac causes of sudden cardiac death:

- Congenital structural of coronary arterial abnormalities
- Aortic valve stenosis
- Mitral valve prolapse
- Myocarditis
- Dilated or hypertrophic cardiomyopathy
- Pulmonary hypertension
- Hereditary or acquired abnormalities of the cardiac conduction system
- Isolated hypertrophy, hypertensive or unknown cause (increased cardiac mass is an independent risk factor for cardiac death; thus some young patients who die suddenly, including athletes, have hypertensive hypotrophy or unexplained increased cardiac mass as the only finding)
Skyfie / Slide 7: (ks 13699)

a) Fallopiese buis / Fallopian tube

b) Geruptuurde ektopie se swangerskap / Ruptured ectopic pregnancy

c) Histologie, S-BHCG, geskiedenis / Histology, S-BHCG, history

d) Hypovolemiese skok / Hypovolemic shock

Skyfie / Slide 8: Skiel (Tuiggemaakte pistool) / Homemade pistol

a) Tuiggemaakte pistool / Homemade pistol

b) Primitiewe konstruksie
   Geimproviseerde onderdele
   Atipiese interne ballistiek
   Atipiese wondballistiek

Primitiewe konstruksie
   Improvised parts
   Atipical internal ballistics
   Atipical wounding ballistics

Waar / Vals
True / False

1. 'n Dogter wat onderzoek word vir kinder seksuele misbruik behoort in meer as een
   positie onderzoek te word. (W)
2. Een van die algemeenste oorsake van onmiddellijke dood na akute myokardiale
   infarktie is ruptuur van die nekrotiese hartspljer met kardiale tamponade. (V)
3. One of the most common causes of immediate death after acute myocardial
   infarction is rupture of the necrotic muscle with cardiac tamponade. (F)
4. 'n Uitgangswond is altyd groter as 'n ingangs wond. (V)
5. Die afmeting van die hymenale opening is baie belangrik in die evaluering van 'n
   moontlik misbruiklike kind. (V)
6. Measuring the hymenal opening is very important in the examination of the sexually
   abused child. (F)
7. Hypertrofie (obstructiewe) kardiomiopatie is 'n ooreëlike toestand wat presenter met
   konsentriëre hypertrofie van die linkerveentakje van die hart. (V)
8. Hypertrophy (obstructive) cardiomyopathy is a hereditary disease which presents
   with concentric hypertrophy of the left ventricle of the heart. (F)
9. Ringfrakture van die skedelbasis word tipies gesien in gevalle van akside
   hiperektenslebesering. (W)
3 Slides

1. Physical Child Abuse (Back of child’s legs + bum)
   - Describe what you see
   - Caffey’s Syndrome (traumatic)
   - Signs of Child Abuse

2. Gun Shot wound (Stellate appearance)
   - Looks like exit but is an entrance wound
   - Describe what you see
   - What are the characteristics

3. Female prepubertal Caeulbals
   - How what position was the child examined in-frog
   - 2 other examination Positions
   - What can you do (while in frog position) to see
     The hymen better
     - Labial separation
     - Labial traction

Questions

1. Clearly abused child but no Signs of child abuse - why? (5)

2. Statutes (5)

3. How can you tell the post Mortem time interval? (5)

4. Different trauma’s in lightning injuries. (5)

Natural death vs. Unnatural death

1. Malaria - natural
2. Bee Stings - unnatural
3. Rabies - unnatural
4. Pulm. embolus after hysterectomy unnatural
5. Pneumonia after spinal injury - unnatural
Slide 1: Brain Asphyxia / Ischaemia

Slide 2: Ectopic Pregnancy - How would you confirm diagnosis? F HG

Slide 3: Homemade Sun - ELABORATE

5. The questions on sexual abuse

Exit wound - explain

Imping abrasion

Name the other types of abrasion:
- friction burn
- crush abrasions
- "brush" abrasions
- gravel rash
- mixed-pattern abrasion

Why there was the anatomy of normal in a child who is definitely sexually abused.
Slide 1: Brain bleed: Subdural haematoma
- Unconscious
- Undiagnosed disease?
- What force? Blunt
- What vessel affected (5)

Slide 2: Anus: 8mm Normal / not normal
- Position to examine: Lying on left side
- Do we need to do internal anal exam? (5)

Slide 3: Implant abrasion
- 4 Other: 2 (A) 6 (B) 8 (C) 10 (E)

Slide 4: Trench: Cordusens posterior blunt force (5) - What force.

Slide 5: Picture: Liver

10. True/False
- 50% occluded or less = MI T
- Dilated anus can be:
  - Kid commonly and mistakenly:
  - See and feel
  - Supernatural can authorize
  - Autopsy.f. family refuse
  - Subdural bleed: Lying deepest at point of impact
  - Hymenal opening needs to be measured
  - Natural Unnatural
  - Kid testatory can be taken as true T
  - Subdural 80% is associated with # F

What is required of doctor before he can certify death if he didn’t treat the patient (2):
- He can issue - on certifying authority

Extradural haemorrhage: Middle meningeal artery
Subarachnoid haemorrhage: Small cerebral arteries
Subdural haemorrhage due to chronic trauma of head
- Name the 5 mechanisms of death in hanging. (5)
- Define clinical death. (3)
- Define brain death. (3)
- Functions of pathologist at scene. (3)
- Discuss hypostasis. (5)

T/F Questions. (Refer to spots for whole Q's)

> 50% death due to occluded coronary artery
  > Cause: MI.  F

> Kids who are understated commonly show anal Sec
  > In case of natural death - Family refuse can you get an autopsy  F

> 80% of Sub-dural bleeds have skull #  F

> Hypothalamic opening must always be measured in child abuse (sexual).  F

> Kids testimony can usually be taken as true  T

> Sexual abuse in a child should be examined in sup position.  T

> Exit wound of gun shot wound is always larger than the entrance wound  F
Cases

0. Drowning in fresh H₂O

Visible signs: frothy mouth = meringue due to protein breakdown
- alveolar exudate protein + mechanical agitation
  - actively breathing at time of drowned

Autopsy findings:
- emphysema aqueousum ("stand up" lungs due to drowning)
  - voluminous
  - marks where lungs expanded against ribs
  - froth in trachea
  - congested, oedematous
  - tissue samples may show vegetable aspiration

- pulm trunk: pale; aorta tinted pink due to tub stains.
- more haemolysis in LV than systemic circulation than pulmonary circulation

- brain: white exudate in central sulci: = arachnoid granulation

Theory

- Fresh water drowning = Ox of exclusion (hypotonic)
  - lungs absorb H₂O → haemodilution → haemolysis → hyperkalaemia → Q arrest
  - v. fast death

- Laryngospasm = dry drowning
- Haemorrhage = per rexxus = tearing
- diapedesis

- Types of drowning: fresh water
  - sea water: hypertonic H₂O → alveolar space + electrolytes (Na⁺, Cl⁻) from salt water into blood

- pseudo-drowning
- true drowning → death