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A CASE OF UNUSUAL PAEDIATRIC CARDIAC ARREST

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Clinical Case

- C.O.D.U. information to P.H.E.M.T:
  - ♀ child
  - 8 yrs old
  - Unconscious
  - Non-breathing

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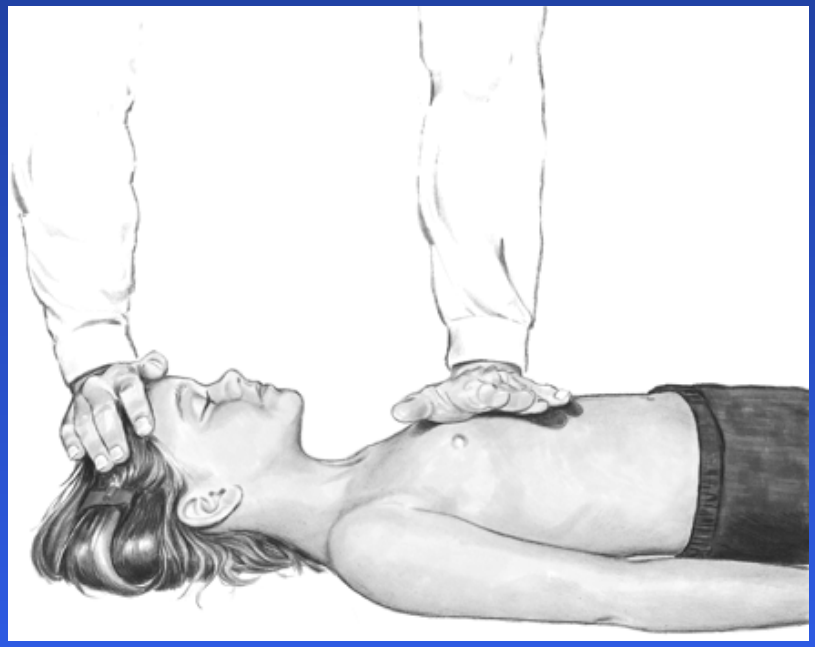
Clinical Case

- **ARRIVAL TIME : 5 minutes**
- **Meanwhile C.O.D.U. gave instructions by phone to parents to perform P.B.L.S.**



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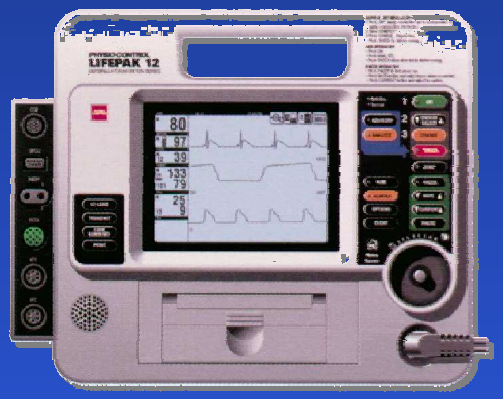
Clinical Case

- **FIRST EVALUATION**



  - **LOCAL**:
    - Parents in P.B.L.S.
    - No ambulance has arrived
  - **CLINICAL**:
    - Unconscious; apnea; acyanotic and no palpable central pulse.
  - **EMERGENCY E.C.G. MONITORIZATION** :
    - Paddles

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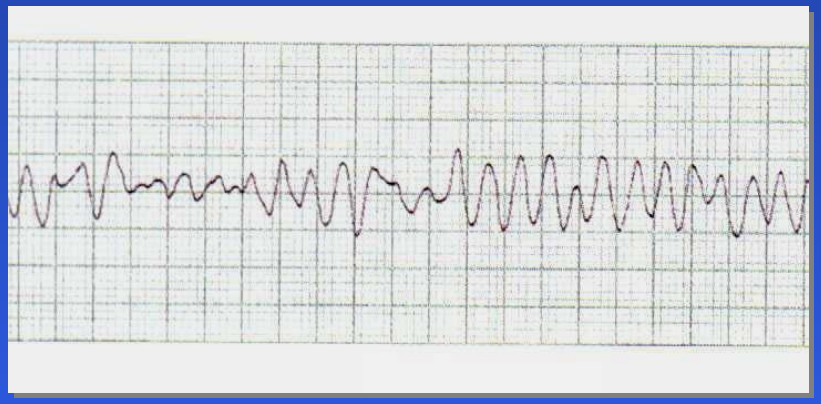
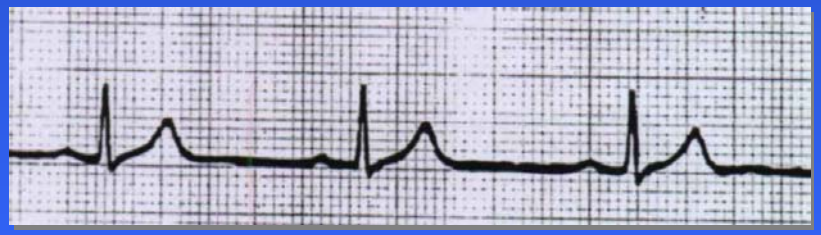
Clinical Case

VENTRICULAR FIBRILLATION

- Immediate defibrillation with 50 Joules
- Sinus bradicardia rhythm





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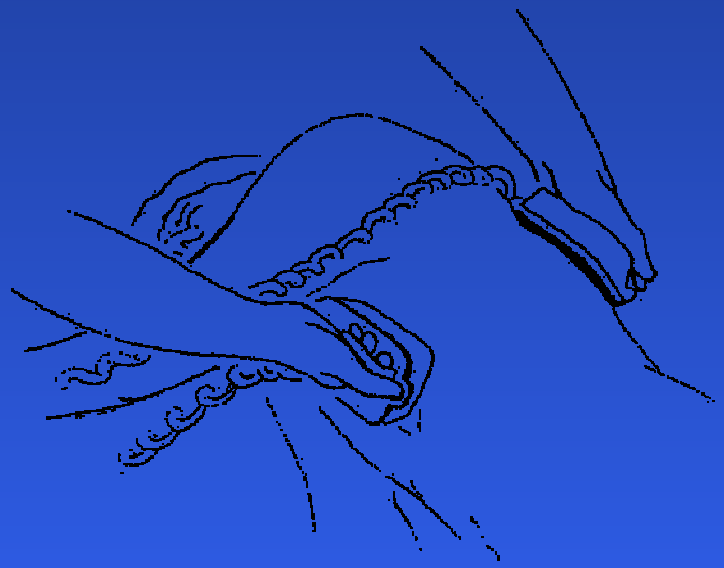
Clinical Case

- Traqueal intubation and peripheral venous cannulation
- Atropine 0,5 mg, iv
- Epinephrine 0,5 mg, iv
- Cervical Collar (for Immobilization)



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Clinical Case

- **SECOND EVALUATION**
  - Normal sinus rhythm
  - Good central pulse
  - Normotensive
  - Peripheral O_2 saturation = 99%
  - Acyanotic
  - Normoglycaemia
  - No spontaneous breathing
  - Glasgow Score = 3

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Clinical Case

- Sustained ROSC
- Hospital transportation 50 minutes after initial call to a P.I.C.U.

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Clinical Case

- **DURING TRANSPORTATION**

  - ✓ Respiratory grasps
  - ✓ Decerebrate movements
  - ✓ Glasgow Coma Scale = 4
  - ✓ Fixed midsize pupils
  - ✓ Sedation with Midazolam – 4mg, iv, bolus
  - ✓ Haemodinamical stability

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Clinical Case

- **Parental information:**
  - While playing with her younger brother, he jumped on her neck staying there for approximately 3 minutes
  - Parents saw a “convulsive” like movements, followed by an unconscious state → 112 call
  - No reference to previous diseases

Clinical Case

- **IN-HOSPITAL MANAGEMENT**
  - Sedation and mechanical ventilation
  - Extubation after 48 hours
  - Glasgow Coma Scale = 15
  - First 24h:
    - ✓ Analyses, ECG, Echocardiogram, EEG, routine RX, CT Brain Scan, MRI Brain and cervical Scan
    - ✓ Results: Normal
  - 96 hours later:
    - ✓ EEG and MRI Brain Scan both normal
  - Discharge 5 days later without neurological deficits

POSSIBLE MECHANISMS FOR CARDIAC ARREST

- ASPHYXIA
  - Cervical venous / arterial vessels compression
  - Carotid sinus compression
  - Airway Compression
- MIDBRAIN TRAUMA
- CARDIAC DISORDERS / EVENTS

  (*COMOTIO CORDIS*)

P.H.E.M.T. Statistics

In the last 30 months the P.H.E.M.T. of S. Francisco Hospital (Lisbon) has assisted 64 cases of paediatric cardiac arrest.

Asystole was the major initial rhythm

Only 18,75% (12 patients) were transported to the hospital with sustained ROSC.

- Mortality rate following out-of-hospital cardiac arrest »»» 90-95%
- Mortality rate following in-hospital cardiac arrest »» 85-90%

Conclusion

- Establishing a physiopathological mechanism is often difficult.
- P.B.L.S. and A.P.L.S. Guidelines, combined with continuous medical formation, are fundamental in order to have positive results.
- Research and uniformization of the criteria of outcome are critical to improve results.