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
Clinical Case

VENTRICULAR FIBRILLATION

- Immediate defibrillation with 50 Joules
- Sinus bradicardia rhythm
Clinical Case

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

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

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

• DURING TRANSPORTATION

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