



# CPU-Net MEDICAL ALERT

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## Shaken Baby Syndrome (SBS)

A serious type of head injury that happens in an infant or toddler that results from extreme rotational cranial acceleration induced by violent shaking or shaking with impact. An algorithm for the medical work-up of SBS is presented here.



### PRESENTATION

Infant or toddler presented with:

- Loss of consciousness
- Altered mental status
- Seizure
- Bruises +/-

#### SUBTLE SIGNS:

- Vomiting
- Irritability
- Poor feeding
- Failure to thrive
- Apnea
- Lethargy

### 1 HISTORY

Obtain a detailed, analytical but not accusatory history from the caretakers. Abusive parents will tell misleading stories about how the "accident" happened. It is important to probe gently and request for clarification about questionable portions of the history.

### 2 PHYSICAL EXAM

Physical exams should be thorough & comprehensive. All findings should be clearly documented using detailed diagram & photographs. Remember that certain physical findings may be similar to differential diagnosis presented above.

### 3 DIRECT & INDIRECT OPHTHALMOSCOPY

Retinal hemorrhages are seen in 95% of cases and are often multi-layered and flame or dot shaped.

### 4 RED FLAGS

Are there any red flags?

- Unsubstantiated stories e.g. falling off the bed, sibling stepped on child, rolling onto child asleep in bed
- Injuries not compatible with history
- Changing history from different caretakers
- Retinal hemorrhage seen

### Cranial CT and/or MRI

Cranial CT Scan is the method of choice for initial imaging. Subdural or subarachnoid hemorrhages are commonly seen in SBS. MRI has shown to detect 50% more SDH than CT scan & can detect smaller injuries. MRI can be used to confirm injuries 2-3 days after CT scan but the cost & availability makes it more useful as a second study in the diagnosis of SBS.

### 5 LABORATORY EXAM

#### Coagulation Studies

PT prolongation occurs in > 50% of patients with parenchymal damage and 20% without parenchymal damage. Coagulation abnormality is a result of tissue factors released from the damaged parenchymal cells.

#### LFT and Amylase Test

Increased LFT and Amylase consider:  
**Blunt Abdominal Trauma**

Deranged Coagulation Studies, Give Vit K

Repeat Coagulation Studies

Coagulation Studies Normalized, consider APCD

Consider differential diagnosis such as:

- Accidental trauma
- Neuro disorder
- Metabolic disorder
- Coagulopathy
- Osteogenesis Imperfecta
- Hepatic disorder

#### END of Algorithm.

However, above differential diagnoses may co-exist with SBS.

Retinal Hemorrhage  
+ combination of abnormal CT/MRI or Skeletal Survey

= SBS

Consider follow-up studies:

- Delineate abnormalities
- Determine timing of injuries
- Monitor evolution

#### References:

- ❖ Shaken Baby Syndrome: A Multidisciplinary Approach by Lazuritz & Palusci
- ❖ Visual Diagnosis of Child Abuse on CD-Rom 2<sup>nd</sup> ed. AAP
- ❖ Child Abuse: Medical Diagnosis & Management by Reece 2<sup>nd</sup> ed.



#### ANNOUNCEMENT

- RTD 2 July 4, 2003, Manila: "Introduction to Crisis Counseling" With Ms. Pablee Wong, Child Psychologist, Voluntary Services Overseas-Philippines
- POSTPONED, Date to be advised ▶ "Understanding Boys: Victims & Offenders of Sexual Abuse" With Dr. Tilman Furniss
- November 10-11, 2003, Manila: CPU-Net Annual Convention