## **TYPES OF EXTRACRANIAL HEMATOMAS**

The incidence of these has increased with use vacuum assisted delivery.



## **SUBGALEAL HEMATOMA** *NOTE: These exams are to always be considered STAT and very emergent.*

Subgaleal hemorrhage (SGH) is a preventable cause of morbidity and mortality in the neonate. All involved in the care of the neonate need to be aware of the importance of prompt diagnosis, monitoring and aggressive treatment to prevent hemorrhagic shock, organ failure, and neonatal death. The most critical time for the development of SGH is less than 12h after birth.

> Blood volume loss can be massive in SGH. It is estimated that the subgaleal space can accommodate up to 300 milliliters of blood. An average term newborn weighing 3 kilograms has a total blood volume of 240 milliliters, thus the subgaleal space can accommodate the infants entire blood volume resulting in complete exsanguination.



# **IMAGES TO OBTAIN FOR EXTRACRANIAL HEMATOMA EVALUATION**

- Images should be obtained at the area of concern with a high frequency linear probe.
- Measure hematoma in three dimensions.
- Use a panoramic view if necessary to measure the extent of hematoma.
- Show suture location in relation to hematoma.
- Document hematoma with and without color.
- Cine clip in sagittal and transverse through hematoma.
- *Full cranial ultrasound protocol to be completed in addition.* Close attention to be paid to the epidural/subdural space deep to the area of concern for superficial hematoma as these can coexist. Be aware of mirror image artifact.



## FEATURES OF EXTRACRANIAL HEMATOMAS:

#### **SUBGALEAL HEMATOMA:**

- Soft fluctuant mass
- Crosses over suture line
- Poorly defined boarders
- Can also have skull fracture
- Presents after birth & progressively worsens; resolves over 2-3wks
- Mortality rate is reported to be from 12-25%.

### **CEPHALOHEMATOMA:**

- Firm mass
- Does not cross over sutures
- Well defined boarders
- Presents after birth & increases for 12-24hrs; resolves over weeks or months
- Rarely severe

### **CAPUT SUCCEDANEUM:**

- Edema of superficial tissues
- Poorly defined borders
- Usually limited to presenting portion of the skull or vacuum site
- Maximum size at birth; resolves over hours or days



Subgaleal hematoma (\*) seen crossing over suture lines (arrow)



Cephalohematoma (\*) seen bound by suture lines (arrow)



Thickened subcutaneous tissues, likely caput succedaneum, with subgaleal hematoma seen crossing over suture lines