INTRODUCTION

- Birth injury is damage that occurs as a result of physical pressure during the birthing process, usually during transit through the birth canal. Many newborns have minor injuries during birth. Infrequently, nerves are damaged or bones are broken. Most injuries resolve without treatment. A difficult delivery, with the risk of injury to the baby, may occur with extremely large fetuses. Injury is also more likely when the fetus is lying in an abnormal position in the uterus before birth.

INCIDENCE

- India showed incidence of 3.2/1000 live birth during 2009-2010.Significant birth injuries accounts for fewer than 2 % of neonatal death and stillbirth. Injuries may occur during intra-natal, antenatal, during resuscitation and may be avoidable or unavoidable. Global neonatal mortality rate is 19 per 1000 in 2016. Incidence of birth injuries was 2.2%. in vaginal delivery it is 3.6% and in CS 1.2%.

MEANING

- Birth injuries is an impairment of the infant's body function or structure due to adverse influences that occurred at birth. Injuries to the newborn from the forces of labour and birth are categorized as birth trauma. The injuries commonly occurs during labour or delivery.

HIGH RISK FACTORS FOR BIRTH INJURIES

- Primigravida
- Prolonged or obstructed labor
- Fetal macrosomia
- Cephalo-pelvic disproportion
- Very low birth weight infant
- Abnormal presentation (breech)

CONTD…

- Instrumental delivery (forceps or ventouse)
- Difficult labor
- Shoulder dystocia
- Inadequate maternal pelvis
- Oligohydramnios
- Precipitate labor

TYPE OF INJURY	ORGANS AFFECTED
Soft Tissue	Skin - Lacerations, abrasions, fat necrosis, petechiae
Muscle	Sternocleidomastoid
Nerve	Facial nerve, Brachial plexus, Spinal cord, Phrenic nerve (C3, C4 or C), Horner's syndrome, recurrent laryngeal nerve
Eye	Hemorrhages: Sub-conjunctiva, vitreous, retina
Viscera	Rupture of liver, adrenal gland, spleen testicular injury
Scalp	Laceration, abscess, hemorrhage, caput succedaneum
Dislocation	Hip, shoulder, cervical vertebrae
Skull	Cephalohematoma, subgaleal hematoma, fractures
Intracranial	Hemorrhages—Intraventricular, Subdural, subarachnoid
Bones	Mandible, Clavicle, Humerus, Femur, Skull and Nasal bones

EXTRACRANIAL INJURIES

1. Cephalo-hematoma
2. Caput Succedaneum
3. Subgaleal Haemorrhage

FEATURES OF CEPHALO-HEMATOMA

- It is never present at birth but gradually develops after 12-24 hrs.
- The swelling is limited by the sutures lines of the skull as the pericranium is fixed to the margins of the bones.
- Well circumscribed, soft, fluctuant and incompressible(irreducible fullness of cephalohematoma) does not pulsate or bulge when the infant cries.
- There may be underlying fracture of the skull.
- A hard sharp edge can be felt surrounding the swelling due to organization of the blood.
- A cephalohematoma is usually largest on 2nd or 3rd day.

MANAGEMENT OF CEPHALO-HEMATOMA

- No active treatment is needed.
- The fullness of a cephalo-hematoma spontaneously resolves in 3 to 6 weeks.
- Only observation in most cases.
- Incision and aspiration of a cephalo-hematoma may introduce infection so it is contraindicated.
- Symptomatic treatment of anemia and jaundice.

FORMATION OF CAPUT SUCCEDANEUM

- With vertex presentation the sustained pressure of the occiput against the cervix results in compression of local vessels, thereby slowing venous return. The slower venous return causes an increase in tissue fluids within the skin of the scalp and an edematous swelling develops.

FEATURES

- Poorly defined margins.
- Baby's head - swelling, puffiness, and bruising present at birth extends across suture lines of the fetal skull and disappears spontaneously within 3-4 days. These are hallmark symptoms of caput succedaneum.
- Can extend over the presenting portion of the scalp and usually associated with molding.
- Usually present after birth and resolves spontaneously without first few days after birth.

SUBGALEAL HEMORRHAGE

- A Subgaleal hemorrhage is bleeding between the galeaaponeurosis of the scalp and the periosteum.

- **Causes:**
- Forces that compress and then drag the head through the pelvic outlet
- Increased use of the vacuum extractor at birth

FEATURES

- Presents as a firm-to-fluctuant mass that crosses suture lines.
- A boggy scalp, pallor, tachycardia, and increasing head circumference – early signs.
- Forward and lateral positioning of the infant's ear because hematoma extends posteriorly.
- The mass is typically noted within 4 hours of birth.
- The bleeding extends beyond bone, often posteriorly into neck and continues after birth.

DIAGNOSIS

- Serial hemoglobin and hematocrit monitoring- decrease in hematocrit level.
- Monitor for level of consciousness.
- Coagulation profile to investigate for the presence of a coagulopathy.
- Bilirubin levels also need to be monitored- increased as a result of degrading blood cells.
- CT / MRI for confirming the diagnosis.

TREATMENT

- Supportive.
- Replacement of lost blood and clotting factors is required in acute cases of hemorrhage.
- Transfusions may be required if blood loss is significant.
- In severe cases, surgery may be required to cauterize the bleeding vessels.
- These lesions typically resolve over a 2–3 week period.