FETAL DISTRESS

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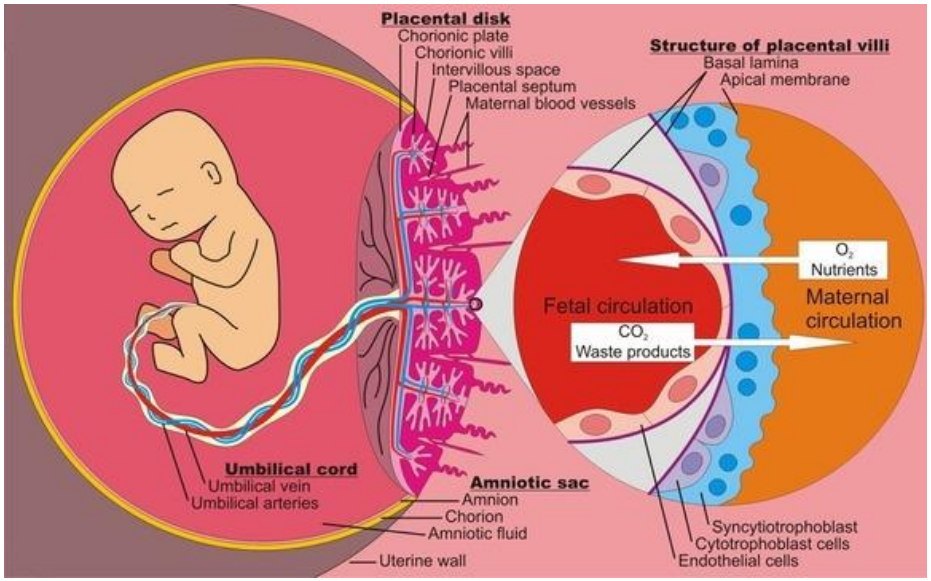
173(2)

What is fetal distress?

- Fetal distress is the term commonly used to describe fetal hypoxia. It is a clinical diagnosis made by indirect methods and should be defined as:
- Hypoxia that may result in fetal damage or death if not reversed or the fetus delivered immediately.
- More commonly a fetal scalp pH of less than 7.2 is used to indicate distress

Etiology

- Fetal oxygen supplied from:
  - maternal circulation-----placenta------umbilical cord------fetus
- **maternal factors**
  - cardiovescular diseases
  - acute bleeding
  - uterus



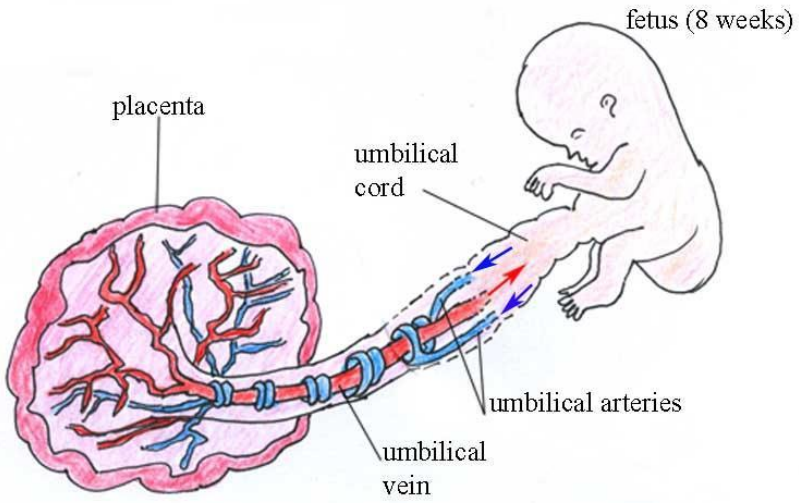
Etiology

- **Fetal factors**
  - Cardio vascular dysfunction
  - deformity
- **umbilical cord and placental factors**
  - abnormal cord:

    entanglement,

    nuchal umbilical cord,

    prolapse of cord.
  - abnormal placenta



Causes of Hypoxia

Maternal risk factors

- Diabetes
- Pregnancy-induced or chronic hypertension
- Maternal infection
- Sickle cell anemia
- Chronic substance abuse
- Asthma
- Seizure disorders
- Post-term or multiple-gestation pregnancy

Causes of Hypoxia

Intrapartum:

- Abnormal presentation of the fetus (breech)
- Premature onset of labor
- Rupture of membrane more than 24 hours prior to delivery
- Prolonged labor
- Administration of narcotics and anesthetics

Causes of Hypoxia

- Maternal hypoventilation
- Maternal hypoxia
- Hypotension can be caused by either epidural anaesthesia or the supine position, which reduces inferior vena cava return of blood to the heart. The decreased blood flow in hypotension can be a cause of fetal distress (supine hypotension syndrome**).

Pathophysiology

- Hypoxia!
  - Acidosis----sympathetic nerve excited----
    - hypertension,
    - tachycardia (initial signs)
  - profound acidosis-----vagus nerve----
    - hypotension,
    - bradycardia,
    - hyperperistalsis----meconium discharge
  - chronic condition:
    - nutritional deficiency----Fetal Growth Retardation (FGR)

Clinical manifestation

- Chronic fetal distress
  - FGR
  - dysfunction of maternal-placental-fetal unit
  - fetal heart monitoring
  - fetal movement calculation
  - amnioscopy

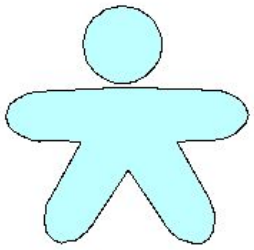
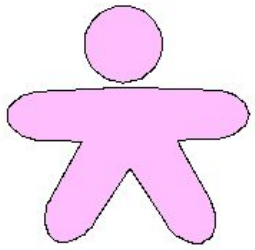
Clinical manifestation

- Acute fetal distress
  - fetal heart rate
  - characteristics of fluid
  - fetal movement
  - acidosis

How to define the newborn asphyxia

- Usually with fetal distress.
- Apgar score: 8-10 normal
- 4-7 mild asphyxia
- 0-3 severe asphyxia

APGAR

	Score 0	Score 1	Score 2
Appearance			
Pulse	No pulse	<100/min.	>100/min.
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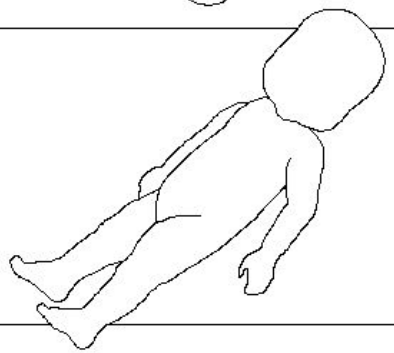
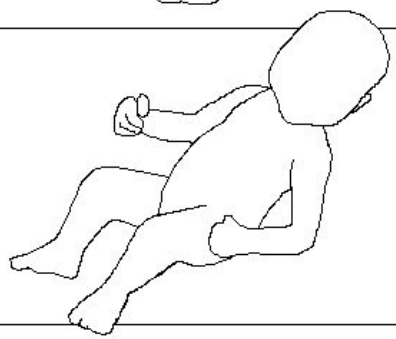
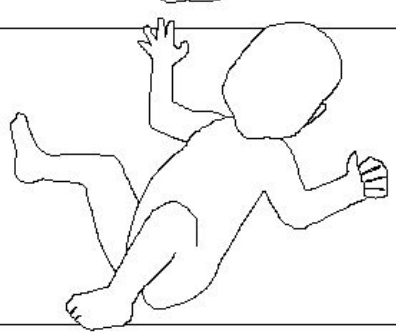
Activity			
Respirations	No respirations	Weak, slow	Strong cry

Effects of Asphyxia

- Fetal hypoxia is associated with severe complications in all systems. The infant may suffer:
- Hypoxic ischemic encephalopathy
- Meconium aspiration syndrome
- Acidosis with decompensation
- Cerebral palsy
- Neonatal seizures

MANAGEMENT

- There have been no recent trials of operative versus conservative management of suspected fetal distress
- Signs of antenatal fetal distress require monitoring with a view to induction of labour or planned caesarean section.
- Immediate delivery of a preterm fetus with suspected fetal distress may reduce the risk of intrauterine hypoxia but increases the risks associated with prematurity. Benefit may be gained by deferring delivery, especially if there is uncertainty; however, evidence is lacking to guide this decision
- Continuing fetal distress during labour may indicate the need for delivery to be expedited. Speed of delivery should take into account the severity of fetal heart rate and blood sampling abnormalities and relevant maternal factors.The urgency of caesarean section should be documented using the following standardised scheme in order to aid clear communication between healthcare professionals about the urgency of a caesarean section

- Class 1: immediate threat to the life of the woman or fetus. Perform this as soon as possible after decision. 30 minutes is an appropriate audit standard.
- Class 2: maternal or fetal compromise which is not immediately life-threatening. In most situations, within 75 minutes of making the decision.. However, this is not achieved in a substantial proportion of cases, although it is uncertain how significant this is clinically
  - There is some evidence that very short 'decision-to-incision' time (<20 minutes) may be inversely proportional to neonatal outcomes, ie lower umbilical pH and Apgar scores
- Amnioinfusion has been shown to be beneficial in suspected umbilical cord compression (particularly when there is oligohydramnios), with a reduced risk of caesarean section:
  - In this process, sodium chloride or Ringer's lactate is infused transcervically or, if the membranes are still intact, via a needle inserted under ultrasound guidance through the uterine wall.
  - The potential adverse effects include umbilical cord prolapse, uterine scar rupture and amniotic fluid embolism.
  - The current evidence on the safety and efficacy of this procedure means it is not recommended in the UK for intrauterine fetal resuscitation; it is only undertaken under special arrangements that include audit and research

THANK YOU FOR YOUR ATTENTION