

Sudden Unexpected Postnatal Collapse

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Overview

- 3 case presentations
- Sudden Unexpected Postnatal Collapse /SUPC
- Prevention strategies
- Conclusions

Baby A

- Mum 35 y o
- Insulin Dependent Diabetic/ controlled
- 1st baby normal delivery
- Induced at 38 weeks
- Ventouse delivery

Baby A

- F I, normal Apgar, 3100g
- No dysmorphic features, no scalp swelling, OFC 34 cm
- Tachypnoeic and needing oxygen
- To NICU, improved by 1 hour of age
- Normal feeding, blood sugar monitoring

Baby A

- At 6 hrs of age, baby was found to be pale and unresponsive
- Gaspings, HR 100
- Emergency call/ Resuscitation teams
- CXR No pneumothorax
- Echo No gross cardiac malformation
- RIP at 8 hrs of age

Baby A

- Post mortem by Police Medical Officer
- verbal report/ no further details
- Medical council
- Judicial Enquiry
- Legal proceedings

Baby B

- Mother 40 y o
- Long history of infertility (10 years)
- Gestational Diabetes Mellitus
- Reduced End Diastolic Flow and IntraUterine Growth Retardation
- Caesarean section at 35 weeks gestation

Baby B

- Male infant, 1835g, Apgar 8 and 9
- No dysmorphic features
- NICU/ Tachypnoea/ Mild hypoglycaemia
- Rx: Nasal canula oxygen, IV fluids and antibiotics
- Day 2: settled, feeding started
- Day 3: Antibiotics stopped/ Tolerating feeds/ Phototherapy

Baby B

- Day 4: Collapsed in the cot
- Pale limp and unresponsive
- Emergency call/ Intensive Resuscitation
- No response to resuscitation

Baby C

- Elective Caesarean section at 38 weeks for previous LSCS
- Uneventful pregnancy
- Cried at birth
- Dried and wrapped/ Brought to the nursery

Baby C

- Male infant, 2885g
- No dysmorphic features
- At 20 min of age, cyanosed, limp and bradycardia
- Intensive Resuscitation/ No response
- RIP at 90 min of age
- Imaging attempted
- PM by police medical officer
- Legal proceedings

Summary

- 3 cases of sudden postnatal collapse and death
- No cause identified
- 2 had postmortem which were inconclusive
- 2 cases are blaming the staff
- SUPC is a well described entity

SUPPC/Definition

- A term or near term baby (>35 weeks) who appears well at birth (Apgar > 7 at 5 min) and is deemed suitable for postnatal care, then collapses suddenly requiring neonatal resuscitation
- Herlenius & Kuhn 2013

SUPPC/Incidence

- 2.6 to 19/100,000 live births
- 1/20,000 live births (United Kingdom)
- Rare in any one centre
- Catastrophic consequences
- > 50% mortality
- Survivors : 50 % HIE. Herlenius&Kuhn

SUPC / Timing

- Close to birth
- 1/3 in the first 2 hours
- 1/3 between 2 and 24 hrs
- 1/3 first week

Aetiology

- Pathoaetiology is complex
- 2 main categories:
 - Infants with an underlying condition (unrecognised) 40%
 - Circumstances suggest accidental asphyxiation (airway obstruction) 53%
 - Small number cause undetermined

Aetiology/Underlying conditions

- Infection
- Cardiac anomalies
- Respiratory conditions
- Maternal drugs and medications
- Metabolic
- Neurological
- Neuromuscular/ Endocrine

Aetiology / Accidental asphyxiation

- Often occurs during skin to skin care (SSC) or breastfeeding
- Unsupervised care
- Poor positioning during SSC or BF
- Maternal exhaustion or distraction
- Primiparous > 35 y o

- Breastfeeding should be initiated within 1 hour of birth
- Skin to skin care is highly recommended immediately after birth

Benefits of skin to skin care

- Recommended for all healthy term newborns due to physiologic and bonding benefits
- Temperature regulation
- Initiation and maintenance of breastfeeding
- Enhance mother infant relationship
- AAP (2012); SSC immediately after birth until first feeding at the breast has been achieved

Key situational risk Factors

- Position of mother and baby during SSC and BF
- Prone position of baby
- First time parents
- Parents left unsupported while caring for their baby
- Reduced maternal awareness
 - Analgesia/ fatigue/ mobile phones/dim lighting


Presentation of SUPC

- Sudden apnoea
- Severe Hypotonia
- Sudden Pallor/ Cyanosis
- Sudden unresponsiveness
- Resuscitation required with Positive pressure ventilation

SUPC

- Refers to a collapse event and includes survivors
- It is a cardiorespiratory collapse

SUPPC v/s SUDI

Feature 	SUPPC (Postnatal Collapse)	SUDI (Infancy Death)
Timing	First 7 days of life (often ≤ 24 hours)	7 days to 1 year (often 1–4 months)
Location	Usually hospital (post-delivery)	Usually home (during sleep)
Incidence	Rare (approx. 2.6–133 per 100,000)	Higher (leading cause of death 1m-1y)
Main Risks	Prone position, skin-to-skin without supervision, maternal fatigue	Prone sleeping, soft bedding, overheating
Outcome	High mortality (~50%) or severe neurological damage	High mortality (usually fatal)

Prevention Strategies

- Close monitoring is the key (BAPM Framework)
- All services providing newborn care must develop policies to
 - Observe mother and baby in the first hours of life
 - Educate parents
 - Improve safety of postnatal care

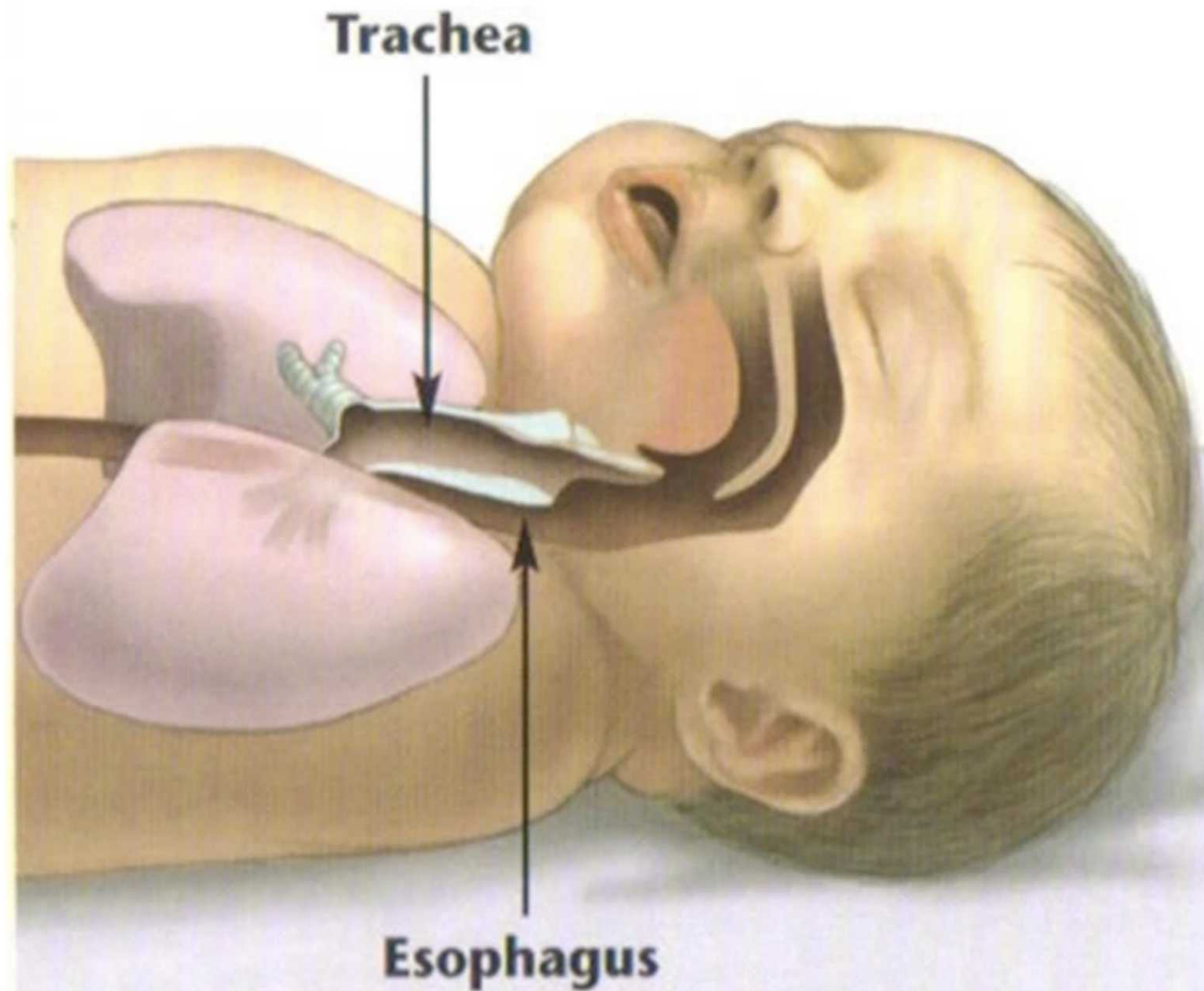
Prevention and management

- Constant supervision
 - Active observation by staff during skin to skin care or breastfeeding in the first 2 hours after birth
 - Nursing staff / trained in assessing and recognising problems in the newborn (AAP guidelines)

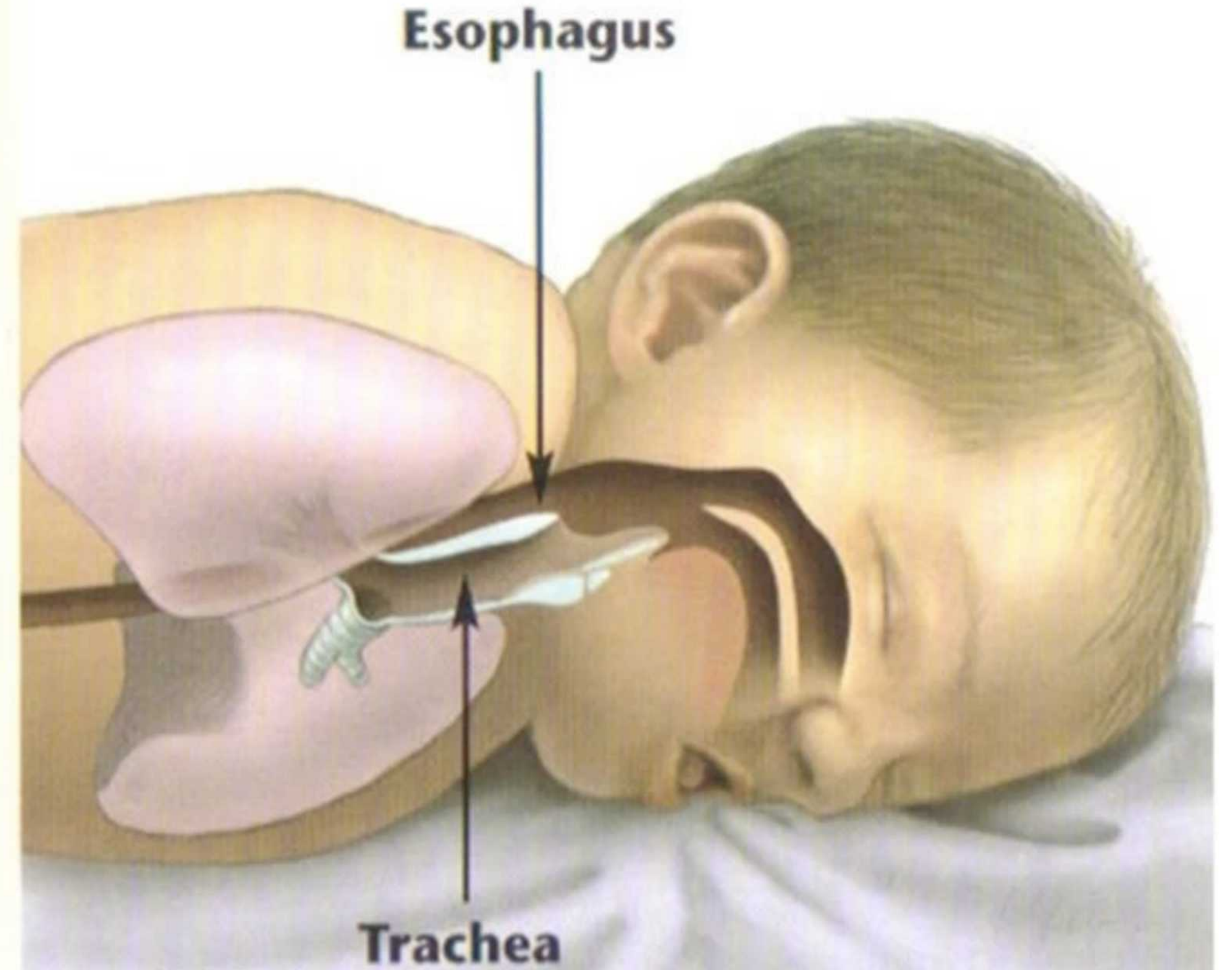
Prevention and management

- Safe positioning of baby/ Not Prone
 - Ensure airway open
 - Nose and mouth not covered
 - Head to one side
 - Chin not on chest
 - Knees flexed

Supine



Prone



SAFE POSITIONING FOR SKIN-TO-SKIN CONTACT



www.thenewbornbaby.com

- ☑ Baby's face can be seen, both nose and mouth are uncovered
- ☑ Baby's head is slightly tilted up and turned to one side
- ☑ Baby's neck is straight, not bent
- ☑ Baby's shoulders are flat against mom
- ☑ Baby is chest-to-chest with mom
- ☑ Baby's chest movements can be felt with breathing
- ☑ Baby's knees are bent and up
- ☑ Baby's back is covered with a blanket and tucked under mom
- ☑ Baby's skin is pink and warm
- ☑ Mom is in a reclining position, not flat
- ☑ Both mom and baby are checked on while sleeping



Prevention and management

- Safe positioning of mother
 - Semi recumbent 45 degrees
 - Baby on mother's chest, not tummy
 - Mobile phones cause reduced awareness

Prevention and management

- Staff awareness
 - Increased vigilance by nursing staff especially regarding maternal exhaustion and baby's positioning
 - Timely observation of mother and baby
 - Ensure family not alone in the first hour
 - Avoid dim lighting















Prevention and management

- Immediate action
 - Prompt removal of the baby
 - Resuscitation with positive pressure ventilation
 - All cases will require full investigation

Investigations

- If baby survives: extensive investigation required
- If baby dies: post mortem required/ Perinatal or paediatric pathologist
- As soon as possible after death

Before post mortem

- Throat and nose swab
- Blood culture
- Blood and urine for metabolic studies
- Blood for karyotyping
- CSF / Skin Biopsy/ Muscle biopsy
- CT/ MRI imaging

Post Mortem/ MRU

- Police medical officer/ no perinatal pathology service
- Each case is referred to the police/ traumatic procedure
- No formal report is seen by the physicians

Conclusion

- SUPC is a well described entity
- BAPM framework 2022/ 42 pages
- Possibly preventable
- Early baby check advisable
- Post natal close monitoring is vital

Key statement BAPM

- SUPC : The most preventable tragedy to befall well newborn infants in contemporary times

Beau-Bassin
Today 06:19

