

Challenges in surgery for preterm babies

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Outline

- Pre-operative
 - Prem baby physiology
 - Resuscitation
 - Referral
 - Timing of surgery
- Intra-operative
 - Environment
 - Equipment
 - Lines
 - Surgical principles
- Post-operative
 - ICU
 - Apnoea monitoring
 - PNAC



Definitions

- Term: 37-42/40
- Prem: Less than 37/40
- LBW: 1500g - 2499g
- VLBW: 1000g – 1499g
- ELBW: <1000g



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- Foetal origin of adult disease
 - NIDDM
 - Coronary heart disease
 - Hypertension
 - CVA

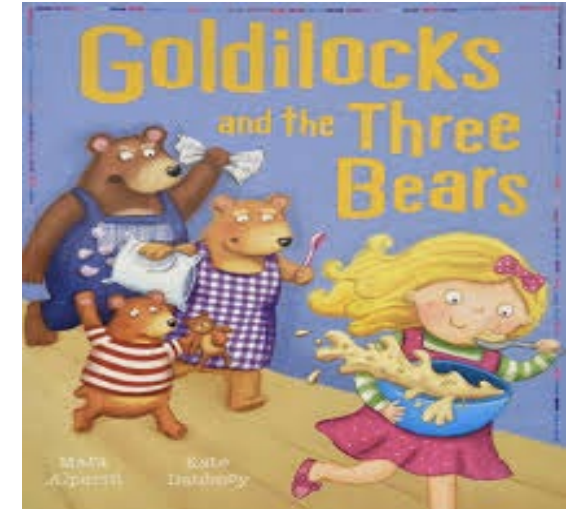
Pre-operative

- Prem physiology
 - Fluids
 - GA, DOL and concomitant disease
 - Blood volume
 - 100ml/kg
 - Weight loss
 - Premies loose more weight (up to 15%) and take longer to regain it
 - Calories
 - Need to sustain 15-25g/kg/day growth – 150kcal/kg/day
 - Ventilation
 - HMD often necessitating CPAP, CMV or HFOV
 - Temperature regulation
 - Thinner epidermis and min brown fat
 - Increased SA to body weight ratio – fluid and heat loss
 - Haematologic
 - 70-80% HbF – Does not release O₂
 - Innate deficiency of Vit K
 - Low platelets if septic



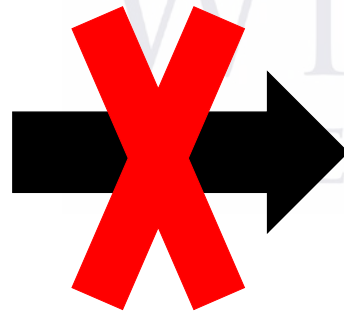
Pre-operative

- Resusc
 - Fluids
 - Don't give too much or too little. Don't give too fast or too slow.
 - Blood, FFP's and platelets
 - Cardiac differences
 - Ventilation
 - Often necessary. Both type 1 and type 2 resp failure.
 - Abdominal decompression
 - One of the most important aspects
 - NGT and Pencil drains
 - Impacts ventilation and circulation
- Referral
 - Needs to be early
 - Long travel distances



Pre-operative

- Timing of surgery
 - Elective surgery: After 1-3 months? >60/40? Before discharge?
 - Emergency surgery:
 - NEC (15-30% mortality)
 - Drain
 - Stabilisation is key

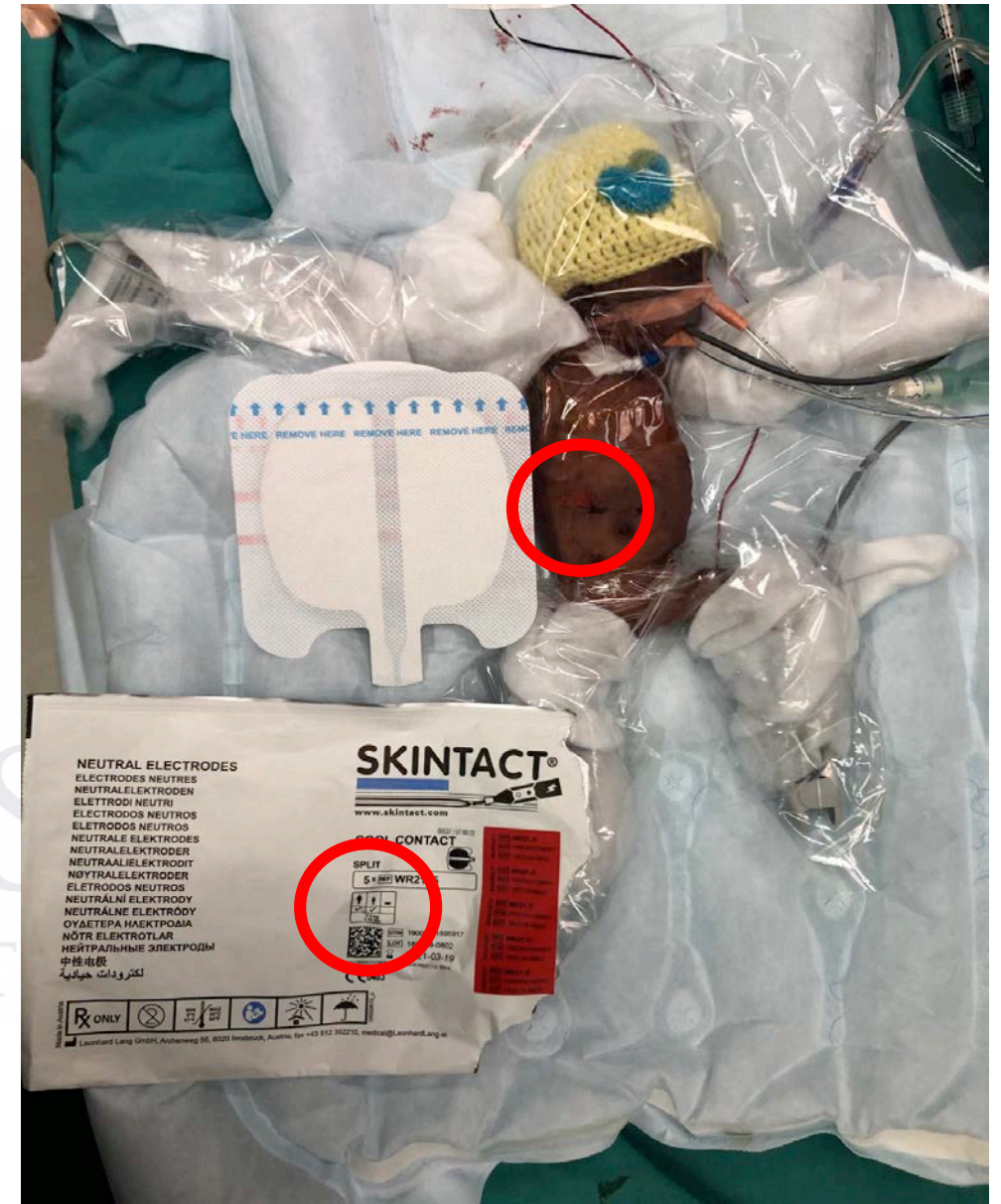


Intra-operative

- Environment
 - 27 degrees Celcius
- Equipment
 - Bigger is almost never better
- Lines
 - Placement
 - Securing
 - Usage
- Surgical principles
 - As fast, dry and simple as possible
 - Minimal handling
 - STAY AWAY FROM THE LIVER
 - ICU OT
- Dressings

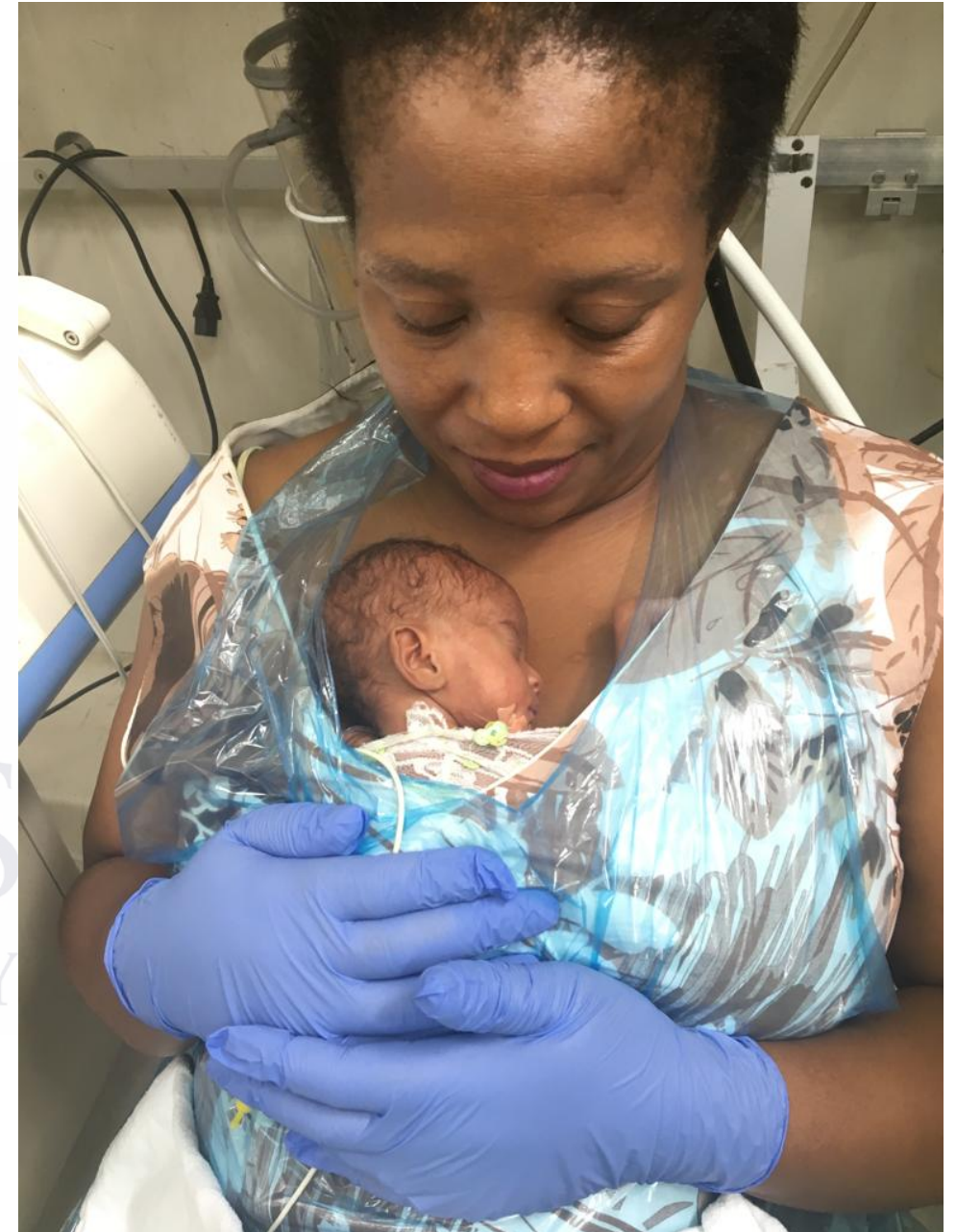


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Post-operative

- ICU
 - Major challenge for ALL emergency cases
 - Often necessary in elective cases
- Apnoea monitoring
 - < 60 postconceptional weeks
- Ileostomies
- PNALD
 - Massive calorie requirements given via TPN
 - Short bowel
 - Congenital
 - Jejunal atresia (esp 3b and 4)
 - Malrotation and volvulus
 - Gastroschisis
 - Acquired
 - NEC



Thank you

Questions?



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