

WOCOVA
7th World Congress on Vascular Access



16-18 OCTOBER MEGARON
2022 ATHENS
GREECE



Ultrasound-guided percutaneous insertion of Broviac lines in infants less than 5kg. Prospective study of 100 consecutive procedures.



Disclosure

- Travel bursary from Vygon UK.
- Previous lecture fees BD.
- Chairman of industry session Clinimed Ltd.

Background

- Tunnelled central venous catheters are essential for the care of sick neonates and infants in modern tertiary care hospitals.
- Central venous access is challenging in small infants.
- The open cutdown technique remains popular in many units for small babies.

Objectives

- To assess procedural complications when using the US guided percutaneous technique.
- Analyse the indications for TCVL insertion.
- Identify other important factors.

Method

- Prospective data collection of 100 consecutive TCVL insertions between 1/1/2018 and 31/3/2020
- Standardised technique: real time US guidance and percutaneous technique.
- Data collection: age, gestation, weight, indication and outcome within 30 days.

Insertion Technique 1

- General anaesthesia in operating theatre.
- Supine with shoulder roll and neck extension.
- 2% Chlorhexidine skin preparation.
- Real time ultrasound guided cannulation of internal jugular vein or innominate vein.
- Procedural fluoroscopy.
- Percutaneous technique: Seldinger wire, skin incision, peel away sheath and skin tunnel.

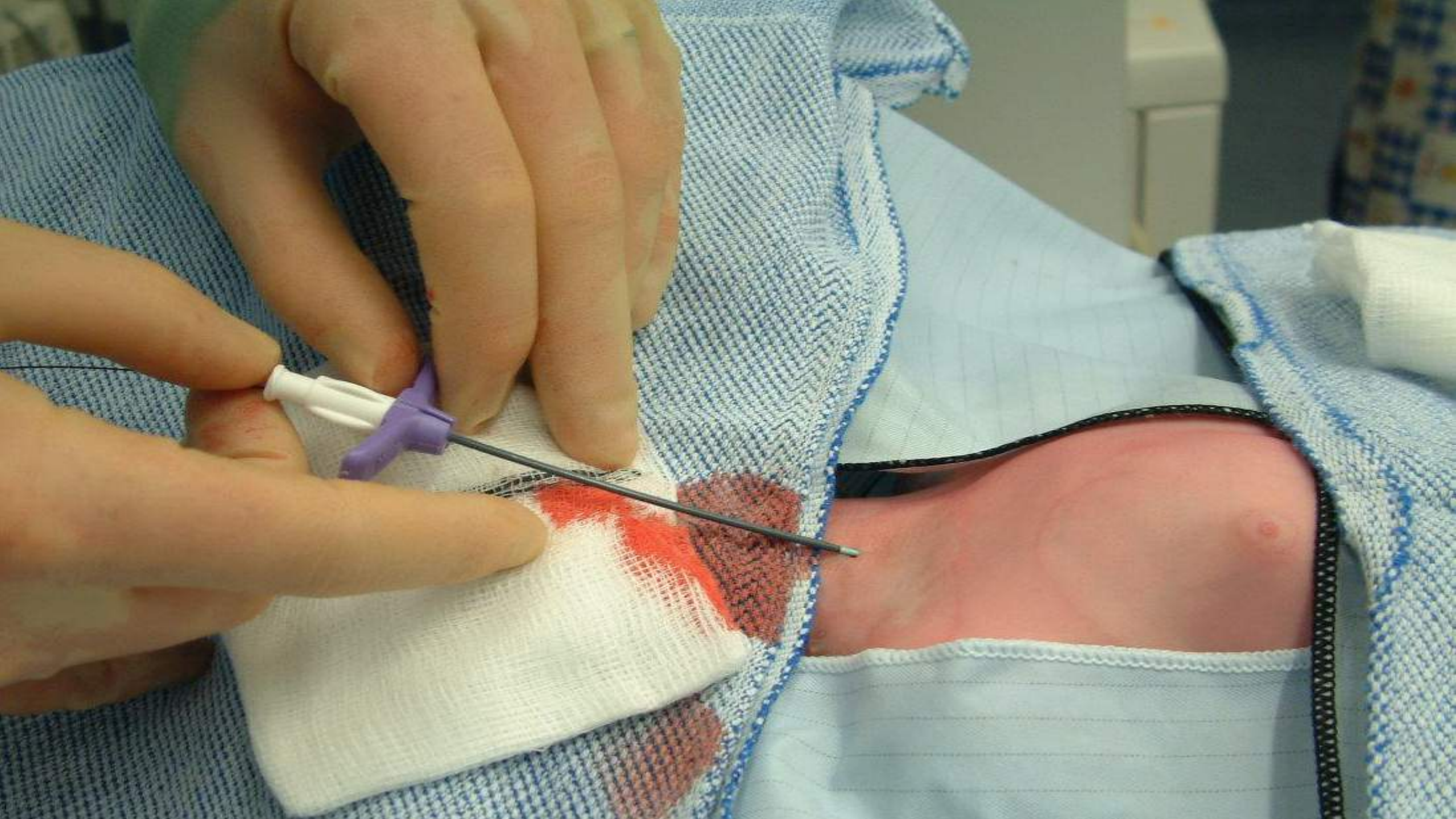
Insertion Technique 2

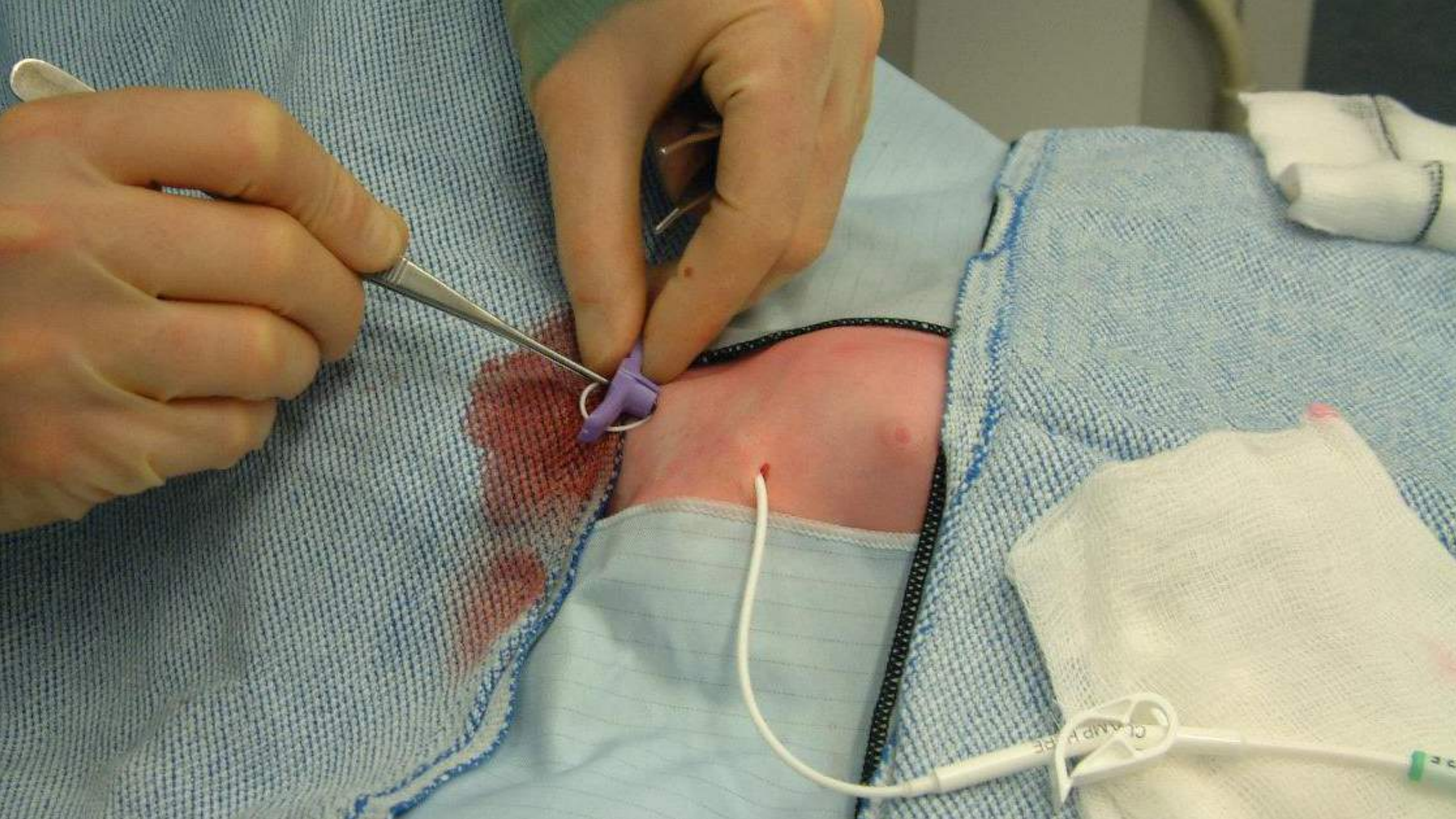
- 2.7 Fr catheter via 3 Fr peel apart sheath if <3 kg
- 4.2 Fr catheter via 4.5 Fr peel apart sheath if >3 kg
- Line tips sited in high right atrium, confirmed with iv contrast fluoroscopy.
- Neck incision closed with 4.0 Vicryl or steristrips.
- Exit seured with prolene, biopatch and dressing.











Results

- 100 consecutive infants had a TCVL in the study period.
- Median age 46 days (1- 316)
- Median gestation 36.5 weeks (23-42)
- Median weight 3kg (0.66-5.0kg)
- Parenteral nutrition 75. Antibiotics 14. Cardiac medication 6. Chemotherapy 3.

Results 2

- 2.7 Fr TCVL in 46 cases/4.2 Fr 51 cases/7 Fr Double 3 cases
- IJV 76, Innominate vein 23, Femoral vein 1
- Right side 73 cases.
- No procedural complications.
- Uncomplicated in 94 cases.
- Difficult cannulation 6 cases, more experienced operator in 4.
- 1 early blockage/ 1 early line infection.

Conclusion

- TCVLs may be placed in infants <5kg with minimal procedural complications when performed by a consultant based vascular access service using the percutaneous technique.
- The open cut-down technique is no longer required.