

VASCULAR SPASM AND THROMBOSIS

VASCULAR SPASM

Blanching or cyanosis of extremity following insertion or manipulation of peripheral or umbilical arterial catheter (UAC)

- **Remove catheter**
 - unless absolutely essential
- **Elicit reflex vasodilation**
 - reflex vasospasm on insertion of UAC can occasionally be corrected by reflex vasodilation by warming contralateral limb
- **Volume expansion**
 - if appropriate, give sodium chloride 0.9% 10 mL/kg as volume expander
- **GTN patch**
 - use can be considered to improve perfusion but not trialled or licensed for use in babies. Discuss with consultant
- Liaise with plastic surgeons, haematologists and other specialists as needed

VASCULAR THROMBOSIS

Clinical features suggesting vascular thrombosis

Site	Clinical signs	Diagnostic imaging
Peripheral or central (aorta or iliac) arterial thrombosis	<ul style="list-style-type: none"> • Pallor • Cold arm/foot • Weak or absent peripheral pulse • Discolouration • Gangrene • Difficulty establishing a proper pulse oximetry trace • Delayed capillary refill time on affected limb 	<ul style="list-style-type: none"> • Doppler scan for large vessel thrombus (sensitivity and specificity uncertain in the neonatal period) • Real-time 2-dimensional ultrasound • CT scan with contrast • Contrast angiography (at specialised centre)
Renal artery/aortic thrombosis	<ul style="list-style-type: none"> • Systemic hypertension • Haematuria • Oliguria • Renal failure 	
Renal vein thrombosis	<ul style="list-style-type: none"> • Flank mass • Haematuria • Hypertension • Thrombocytopenia 	
Inferior vena cava thrombosis	<ul style="list-style-type: none"> • Cool lower limbs • Cyanosis • Oedema 	
Superior vena cava thrombosis	<ul style="list-style-type: none"> • Swelling of upper limbs and head • Chylothorax 	
Central venous line thrombus	<ul style="list-style-type: none"> • High pressures on long line • SVC obstruction • Chylothorax • Swelling • Discolouration of extremity 	
Right atrial thrombus	<ul style="list-style-type: none"> • Heart failure • Embolic phenomenon 	
Pulmonary thromboembolism	<ul style="list-style-type: none"> • Respiratory failure 	<ul style="list-style-type: none"> • Lung perfusion scan (at specialised centre)

MANAGEMENT OF THROMBOEMBOLISM

- Controversial
- Inadequate controlled trials
- Inform consultant
- Liaise with plastic surgeons, haematologists and other specialists as required

Treatment options

Conservative

- Observe closely with no intervention e.g. unilateral renal vein thrombosis

Anticoagulation and thrombolysis

- No controlled neonatal trials
- Use only under guidance from haematologist and/or plastic surgeon