

Microsurgical Salvage of neonatal upper limb ischaemia subsequent to intrauterine brachial vessel constriction.

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The Case

- 36+6 male baby born via uncomplicated elective C-section
- Nulliparous mother
- Antenatal care and family history unremarkable
- APGARs normal
- 'Flail', pulseless RUL post delivery

Investigations

- XR= no cervical rib, fracture or dislocation
- Bedside transthoracic echo= normal
- Doppler USS= thrombosis of the proximal brachial artery

Working Diagnosis

- Volar forearm compartment syndrome secondary to neonatal thromboembolism

Intervention

- Surgical exploration under GA
- Aetiology was due to dense fibrotic circumferential constriction of the brachial vessels and plexus
- Successful revascularisation achieved with a contralateral interposition reversed great saphenous vein graft.

Outcome

- At 6 month follow up – the limb demonstrated normal vascularity and normal sensorimotor function.



Figure 1 Pallor on elevation and dry necrosis

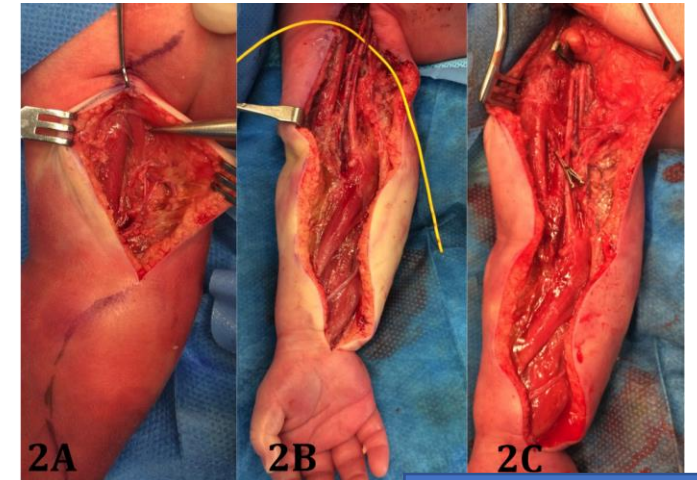


Figure 2A - Langers Arch (Axillopectoral Muscle).

Figure 2B - Brachial artery deep to vein (yellow sloop).

Figure 2C - 3cm resection brachial artery

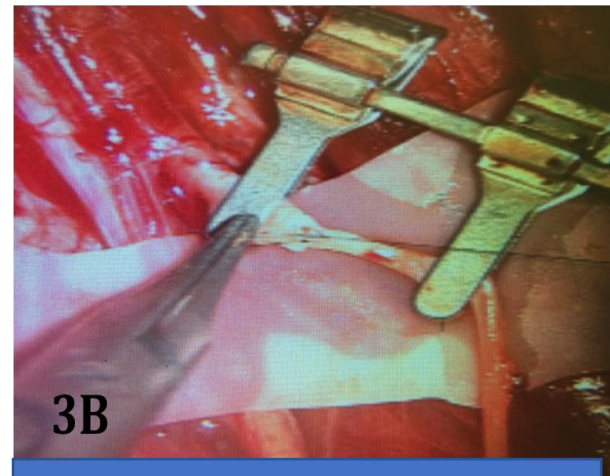


Figure 3 – Microvascular anastomosis of interposition vein graft



Figure 4 – Final arm – restored flow and volar forearm fasciotomy

References

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Neonatal Thromboembolism: Key Facts ¹⁻⁴

Incidence: 0.5 in 100,000 live births

Complications: compartment syndrome, tissue loss, limb loss, reduced limb growth, irreparable neuropathies and Volkmann's syndrome

Risk factors: maternal lupus, maternal diabetes, birth asphyxia, neonatal polycythaemia, sepsis, poor cardiac output and dehydration

Treatment: unfractionated heparin, fasciotomies, open thrombectomy, segment arteriectomy with interposition reversed vein graft