

TARSAL CANAL BLOCK FOR CLUBFOOT SURGERY IN CHILDREN

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Background & aim:

Clubfoot (CLB), is a common congenital orthopedic foot deformity in children. Surgery is indicated after a well conducted nonoperative management failure. It's usually performed under combined general anesthesia with a regional block (caudal or sciatic popliteal block) distal blocks being very few used in children. Tarsal canal block (TCB) is a new ultrasound guided approach of the the posterior tibial nerve (PTN) which consists to deposit local anesthetic (LA) below the fascia that overhangs the PTN avoiding the neurovascular bundle.

Methods :

Twenty two children scheduled for CLB surgical repair were included in this prospective observational study. Blocks were performed in intubated, asleep children (propofol without opioids). A linear probe was placed on the medial side of the leg, above the medial malleolus.

An out-of-plane injection of 0.3ml/kg of 0.2% BUPIVACAINE with 1µ/kg of clonidine below the fascia that overhangs the PTN and while removing the needle we deposited 0.1 ml /kg of the same mixture above this fascia (for saphenous block by spreading of LA). We considered as insufficient surgical analgesia any increase in heart rate beyond 20% of baseline and required iv alfentanil (0,01mg/kg).

We assessed intra operative analgesia, incidents, complications and post operative pain using the FLACC scale every 06h during the first 24 hours. All children received 200 µg /kg dexamethasone intravenously at induction and had an oral postoperative multimodal analgesia regime combining: paracetamol (15mg/kg/6 hours) and ibuprofen(10mg/kg /8h).

Results :

Mean age was 2.3 years (1-9), and average weight 17.8kg(10-30).

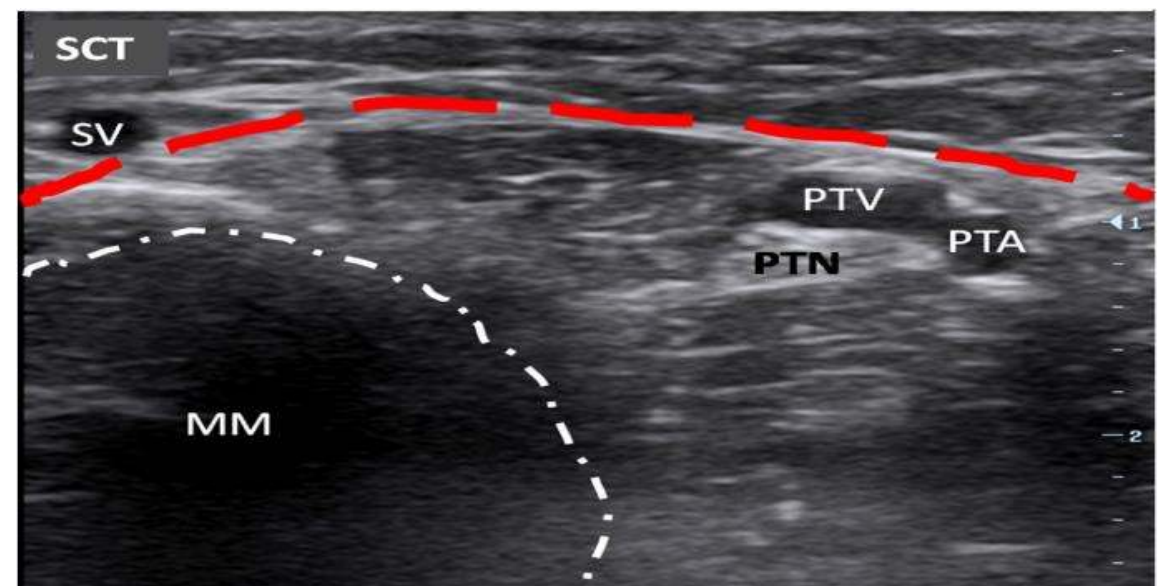
06 children needed intraoperative analgesia supplement (27%), but none in postoperative.

Early oral feeding was achieved without problems in all patients(H3) except 02 who presented postoperative vomiting

Discussion :

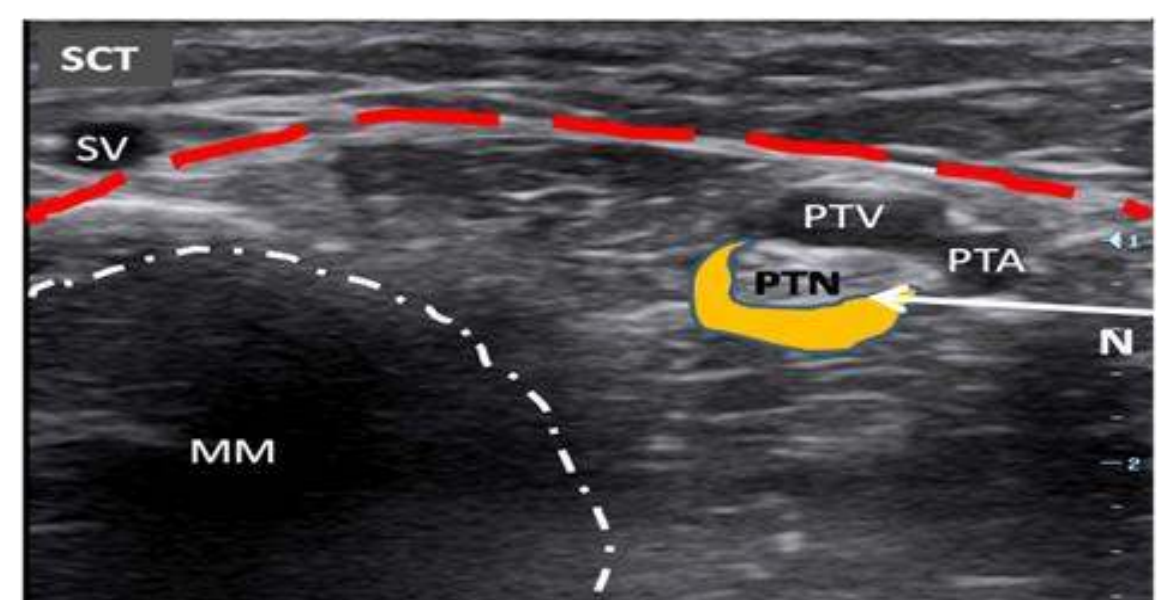
TCB Allowed us an effective & safe perioperative pain relief in children undergoing CLB surgical repair.

This spreading approach probably reduces intra vascular injection and nerve damage, but more studies are necessary to substantiate our conclusion.

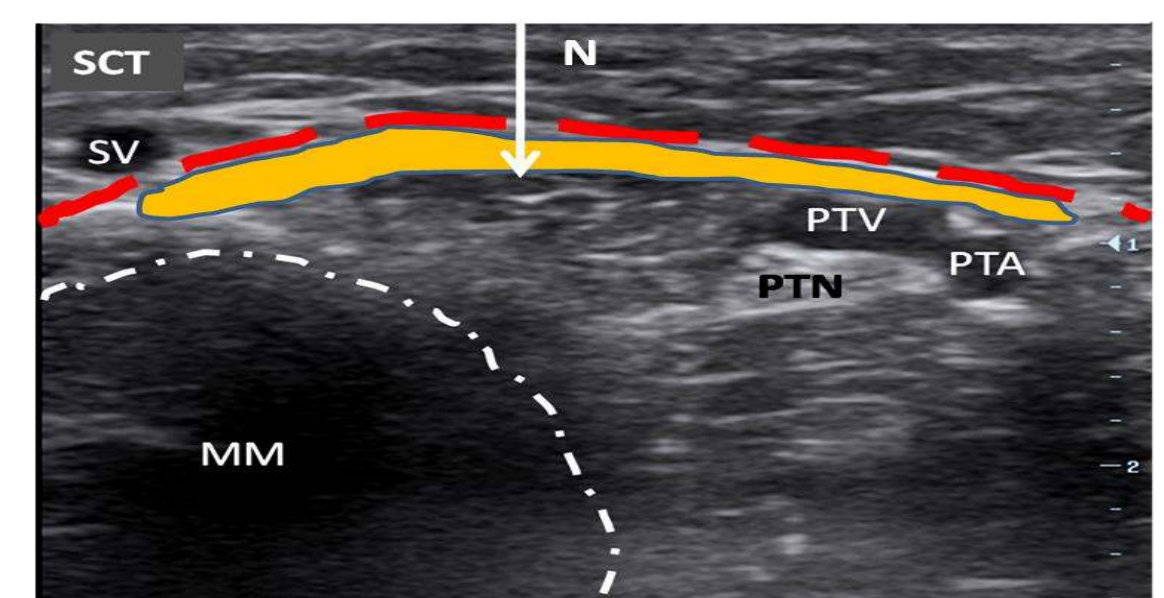


Sonoanatomy

SCT : sub cunaeous tissue. MM: medial malleolus.
 PTV : posterior tibial vein . PTA: posterior tibial artery
 SV :saphenous vein .
 N :needle



Perineural approach



Tarsal canal block

Ref: 1- Redborg, K., Antonakakis, J., Beach, M., Chinn, C., & Sites, B. Ultrasound Improves the Success Rate of a Tibial Nerve Block at the Ankle. Regional Anesthesia Pain Medicine, 34, 256-260.

2- Regional anesthesia for clubfoot surgery in children. Tobias JD, Menico GA Am J Ther. 1998 Jul;5(4):273-7.