Acute pain management of upper limb gangrene pain with an infraclavicular nerve catheter

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Brachial plexus blocks are useful for perioperative analgesia and sympatholysis for acute ischemia. However, pathophysiology and neurological registration pathways of ischemic pain are complex and poorly understood. The role of a single-shot regional analgesia remain controversial. Intuitively, a continuous regional analgesia infusion may therefore be able to provide many advantages.

Consequently, we here report a case that illustrated a successful example of a continuous infraclavicular brachial plexus infusion in returning the patient to the society who once considered amputation as means of achieving relief.

Our patient is a 33-year-old gentleman, with a history of intravenous drug use, who presented with worsening upper limb pain and discoloration of the digits. Examination revealed distal digital gangrene with no evidence of acute limb ischemia. Investigations otherwise was consistent and patient was managed conservatively. However, his pain was poorly managed with intravenous analgesia and was debilitating. His analgesia was subsequently managed by our multidisciplinary acute pain team involving a continuous catheter nerve block infusion with titration using a CADD® ambulatory infusion pump. With troubleshooting of his concurrent opioid dependency issues affecting analgesia selection and delivery, preparation for infusion liberation and his eventual discharge, we were able to achieve effective pain relief with a mixture of ropivacaine and fentanyl, allowing the regain of hand movements.

Considering that infraclavicular catheter placement renders a sustained effect of block, together with concomitant vasodilatation and increase in microvascular circulation, this facilitate the treatment of the reversible vasospasm component of ischemia.

All in all, continuous regional blockage is not a new treatment modality. It is effective but it is often underutilised or seldom reported in the current literature regarding its use for ischemic pain.