

Seven peripheral nerve blocks as primary anesthesia for bilateral lower extremity skin graft surgery in a critically ill patient

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INTRODUCTION

62 year old male, history of type 2 diabetes mellitus, hypertension, coronary artery disease (status post coronary artery bypass graft, percutaneous coronary intervention with two stents), atrial fibrillation/atrial flutter, heart failure with reduced ejection fraction (EF-20%), status post bi-ventricular implantable cardioverter/defibrillator, chronic obstructive pulmonary disease (50 pack year active smoker), obstructive sleep apnea, metabolic equivalents (METs) <4, alcohol, marijuana use. Patient had 27% total body surface area full and partial thickness burns to bilateral lower extremities. Given his comorbidities and high risk for general anesthesia, patient underwent seven separate lower extremity peripheral nerve blocks to achieve surgical anesthesia.

METHODS/MATERIALS

Given cardiovascular disease, 0.5% ropivacaine used in lieu of 0.5% bupivacaine. 2% lidocaine to enhance onset. Of note patient received enoxaparin at 6 am the morning of surgery. Nerve stimulator was used along with ultrasound for identification. Blocks performed:

- Right transgluteal sciatic-13 ml 0.5% ropivacaine, 7ml 2% lidocaine
- Right obturator nerve-6.4 ml 0.5% ropivacaine, 3.4 ml 2% lidocaine
- Right femoral nerve- 6.4 ml 0.5% ropivacaine, 3.4 ml 2% lidocaine
- Right lateral femoral cutaneous nerve-3.2 ml 0.5% ropivacaine, 1.8 ml 2% lidocaine
- Left femoral nerve- 6.4 ml 0.5% ropivacaine, 3.4 ml 2 % lidocaine
- Left obturator- 6.4 ml 0.5% ropivacaine, 3.4 ml 2% lidocaine
- Left popliteal sciatic-13 ml 0.5% ropivacaine, 7 ml 2% lidocaine

CLINICAL PHOTOGRAPHS



Figure 1: Right lateral lower extremity



Figure 2: Right medial lower extremity



Figure 3: Left lateral lower extremity



Figure 4: Left medial lower extremity

CLINICAL COURSE

Patient underwent tangential excision of bilateral lower extremity burn wounds (split thickness skin graft to the right thigh and calf, split thickness skin graft to the left distal thigh and medial/lateral knee) after receiving his nerve blocks with minimal sedation (100 mcg fentanyl and 1 mg midazolam), and no significant intra-operative events (ie hemodynamic instability, failure of block, local anesthetic toxicity, etc.). No other sedation was necessary.

DISCUSSION

Medically challenging aspects of this case include

- Patient specific concerns: comorbidities, medications (enoxaparin day of surgery).
- Anesthesia considerations for adequate surgical coverage of nerve blocks for skin grafting to ~27% body surface area , and total amount of local anesthetic to be safely used.
- Our patient was a poor candidate for general anesthesia and given he received enoxaparin the day of surgery, neuraxial anesthesia was contraindicated. Carefully planned regional anesthetic technique provided adequate conditions for surgery.

REFERENCES

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