

**Surgeon experience does not
alter success rates when
performing foot block
regional anaesthesia**

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Introduction

- The foot block is a highly successful method of regional anaesthesia for forefoot surgery [1, 2].
- There is little understanding as to why this method is occasionally unsuccessful.
- This investigation's main aim was to determine if surgeon experience alters the success rate of the foot block technique using a statistical comparison.

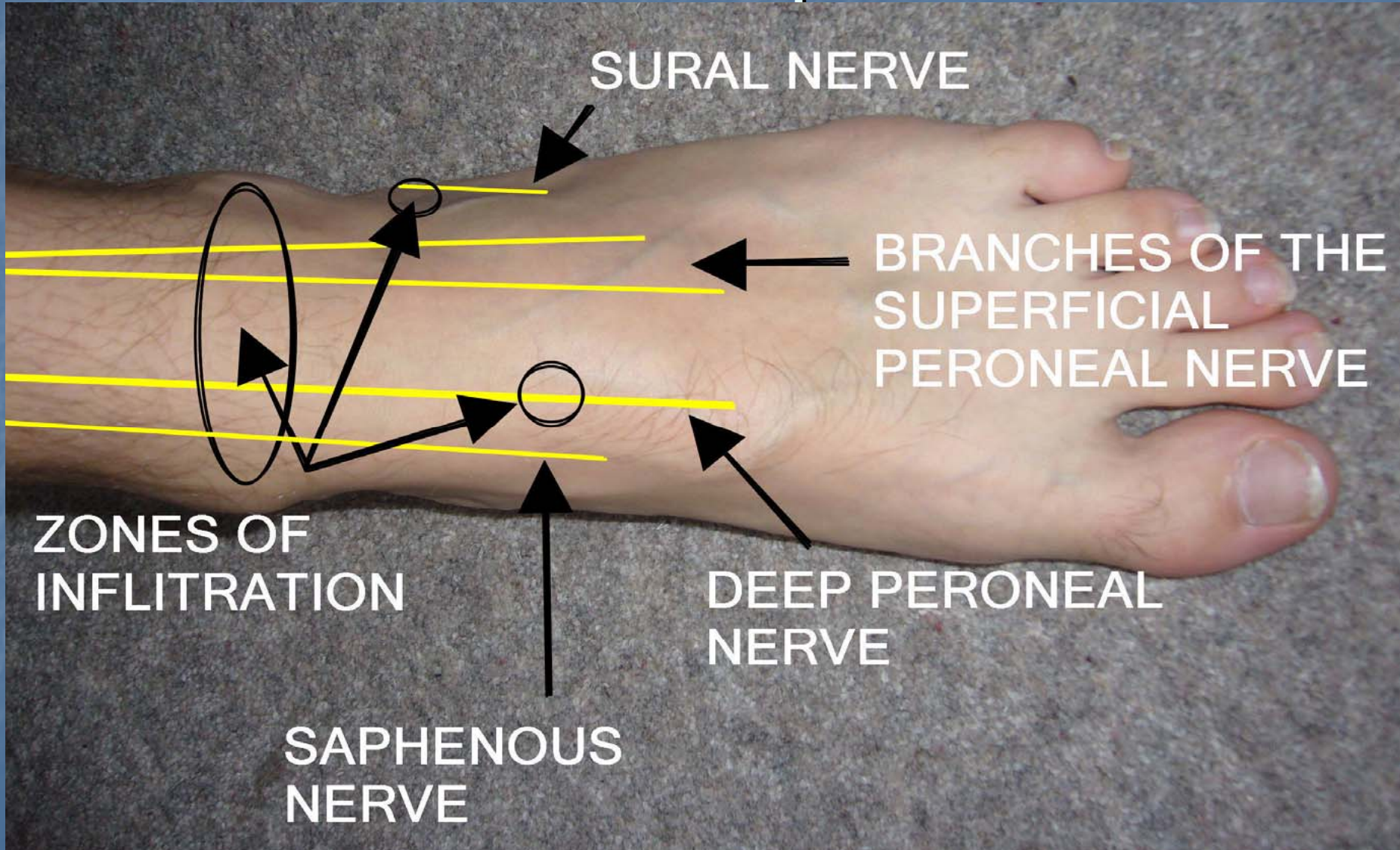
Materials and Methods

- 107 consecutive patients admitted for a range of elective forefoot procedures were prospectively recruited to participate.
- Post general anaesthesia all patients were administered a foot block by the senior house officer, registrar or consultant surgeon.
- Foot block consisted of 20mls 0.5mg/ml bupivacaine using a standardised technique.

Technique



Technique



Materials and Methods

- A successful block was defined as a pain score of 0 on the validated Western Ontario and McMasters 100mm (millimetres) visual analogue pain subscale for 'pain at rest' [3] one hour after recovery from general anaesthesia.

Extreme Pain (100mm)



No Pain

(0mm)

Results

- Experience categorised success rates were similar.

Surgeon	Success rate	Unsuccessful
Junior surgical trainees (senior house officers)	81.3%	9 of 48
Higher surgical trainees (speciality registrars)	80.9%	9 of 47
Consultant surgeons	83.4%	2 of 12

Results

- Fisher's exact contingency table analysis found no statistically significant differences between foot block success and surgeon experience.
- The overall institutional success rate was 81.3% (20 of 107 unsuccessful) for a visual analogue pain score of 0mm one hour after general anaesthesia in the operated foot.

Conclusions

- Our institutional success rates were comparable to published series which demonstrate overall success rates of around 89-92%.
- Although the technique can provide up to 10 hours of complete regional anesthesia, even a successful block does not reduce overall analgesic requirements during the first 24 hours after surgery [1, 2, 4-7].

Conclusions

- Therefore the use of ultrasound or nerve stimulators to improve success rates is probably not appropriate.
- This investigation demonstrates that the foot block technique of regional anaesthesia for elective forefoot surgery is simple to perform and easily mastered by surgeons at any level of training.
- It is likely that minor anatomical variations of the involved nerves rather than surgeon experience are the primary causes of failure.

References

- [1] Provenzano DA, Viscusi ER, Adams SB, Kerner MB, Torjman MC, Abidi NA. Safety and efficacy of the popliteal fossa nerve block when utilized for foot and ankle surgery. *Foot and Ankle International* 2002;23:394–9
- [2] Singelyn FJ, Gouverneur JM, Gribomont BF. Popliteal sciatic nerve block aided by a nerve stimulator: a reliable technique for foot and ankle surgery. *Regional Anaesthesia* 1991;16:278–81.
- [3] Bellamy N, Buchanan EE, Goldsmith CH, Campbell J, Stitt LW. Validation study of WOMAC: a health status instrument for measuring clinical important patient relevant outcomes to antirheumatic drug therapy in patients with osteoarthritis of the hip or knee. *Journal of Rheumatology* 1988;15(12):1833-40

References

- [4] Miguez A, Slullitel G, Vescovo A, Droblas F, Carrasco M, Perrin Turenne H. Peripheral foot blockade versus popliteal fossa nerve block: a prospective randomized trial in 51 patients. *Journal of Foot and Ankle Surgery* 2005;44(5):354-7
- [5] Rudkin G, Rudkin A, Draconoulos G. Bilateral ankle blocks: a prospective audit. *ANZ journal of surgery* 2005;75(1):39-42
- [6] Turan I, Assareh H, Rolf C, Jakobsson J. Multi-modal-analgesia for pain management after Hallux Valgus surgery: a prospective randomised study on the effect of ankle block. *Journal of Orthopaedic Surgery* 2007;18(2):26
- [7] Koscielniak-Nielsen Z. Ultrasound-guided peripheral nerve blocks: what are the benefits? *Acta Anaesthesiol Scand* 2008;52(6):727-37