



Use of peripheral blocks and tourniquets in foot surgery: A survey of Australian orthopaedic foot and ankle surgeons



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ABSTRACT

Background: The most common reasons for unplanned admission to the hospital from outpatient surgery have the potential to be minimised or eliminated by peripheral nerve blocks (PNB). Tourniquets are commonly used in elective extremity surgery but its use is mostly guided by personal preferences and does not correlate with the existing literature. Our aim was to explore the current practice of PNB and tourniquet use by foot and ankle surgeons in Australia.

Methods: The Australian Orthopaedic Foot and Ankle Surgery Society (AOFAS) annual meeting was held in Adelaide in 2011. Members were asked to complete an electronic survey on their current use of peripheral nerve blocks and tourniquets. Two specific elective case scenarios were included for comment, one pertaining to forefoot pathology, the other hindfoot pathology.

Results: Twenty-three AOFAS members replied to the survey, an overall response rate of 76.6%. Of these, only two surgeons did not use ankle blocks in elective surgery and none were prepared to operate without a tourniquet. Most Australian foot and ankle surgeons were reluctant to use local anaesthetic techniques without an accompanying GA.

Conclusions: While the literature suggests that GA may add to complications without any benefit for the procedure and that distally based tourniquets may add benefit, these are not the favoured techniques in Australian foot and ankle surgeons.

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1. Introduction

The most common reasons for unplanned admission to the hospital from outpatient surgery suite are nausea, vomiting and postoperative pain [1–3]. All of these have the potential to be minimised or eliminated by regional anaesthesia (RA). Foot and ankle patients experience a high incidence of postoperative pain [4], which therefore can lead to a high unplanned admission rate. Peripheral nerve blocks (PNB) can help to provide an effective analgesia in the postoperative period and thereby reduce the

unplanned admission rate. The extent to which PNB are currently used in Australia is unknown.

Tourniquets are commonly used in elective extremity surgery. It allows the surgeon to work with greater precision due to a blood less field. In our experience the use of tourniquets is mostly guided by personal preferences and most surgeons do not know the existing literature.

The aim of this study was to explore the current practice of PNB and tourniquet use by foot and ankle surgeons in Australia and to investigate if it correlates with the existing literature.

2. Materials and methods

A survey was electronically mailed out to members attending the meeting. The survey was completed online at the time; responses were collected and collated.

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The first question related to the whether the respondent performed foot and ankle surgery; a positive response allowed him or her to complete the remainder of the survey.

Demographic detail was collected, including type of practice, age and jurisdiction of practice. Respondents were also asked how many foot and ankle surgical cases they performed annually and whether they were a member of AOFAS.

Specific questions were asked about the use of peripheral blocks and tourniquets in foot surgery in a specific clinical scenario. The survey included clinical photographs and two hypothetical cases.

Case number 1 showed a 40-year old woman with a hammer toe overlying the great toe. Respondents were asked what treatment they would use in performing surgery on a severe *hallux valgus* and a painful hammer second toe which required surgery.

Case 2 related to the use of peripheral blocks and tourniquets in hindfoot surgery. The subject was a 50-year old male with a painful Haglund's deformity and an insertional Achilles tendinitis which required a calcaneal osteotomy, debridement and bony reattachment of the Achilles tendon.

A series of questions was asked regarding the preferred method of anaesthesia for the two case scenarios.

The responses were collated and organised into an appropriate format for transfer to a statistical programme, SAS version 9.2 (SAS Institute Inc., Cary, NC, USA). Statistical analysis was performed to obtain percentages of all of the responses.

3. Results

The survey was mailed to the 30 AOFAS members present at the conference; 23 responses were received with a response rate of 76%.

Characteristics of respondents

- 44% were aged 41–50 years; distribution within 30–40 and 51–60 age groups were 26% each. 4% of the respondents were 61–70 years old.
- 69% performed more than 200 cases per year.
- 62% were involved in a mixture of public and private practice appointments, 35% worked only in private practice and 2% were in full time public appointments.

For case scenario 1 (forefoot deformity), general anaesthesia (GA) with an ankle block was the most commonly chosen anaesthetic (81.8%) (Fig. 1). 13.6% chose an ankle block (\pm sedation) with 4.5% choosing GA alone. 63.6% chose a thigh tourniquet, 18.2% a mid-calf and 18.2% an ankle tourniquet (Fig. 2).

One respondent did not answer the questions on case one. No one was prepared to operate without a tourniquet. Only two of the respondents did not use local pain relief and did not explain why.

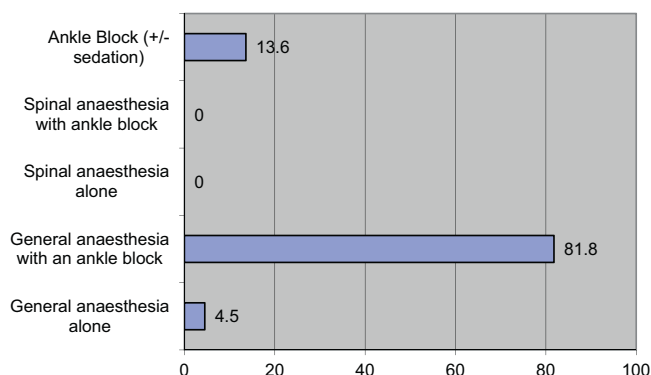


Fig. 1. Case 1: Type of anaesthesia preferred.

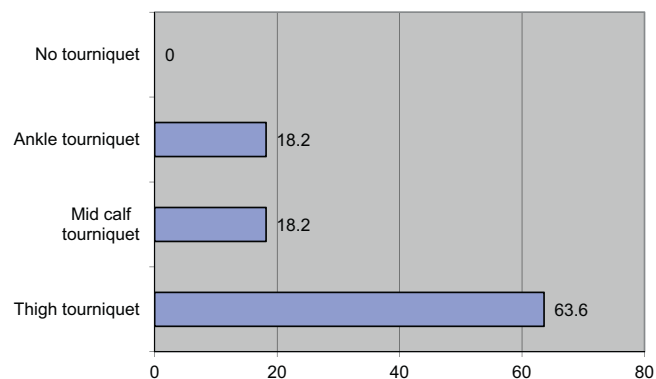


Fig. 2. Case1: Type of tourniquet preferred.

In case scenario two (bony and soft tissue hind-foot procedure), GA with a sciatic block (popliteal approach) was the most commonly preferred procedure (63.4%), GA with a proximal sciatic block (13.6%) and GA alone (13.6%). 9.1% chose spinal anaesthesia with a sciatic block (popliteal approach) (Fig. 3). 95.5% chose a thigh tourniquet and one surgeon a mid-calf tourniquet (Fig. 4). One respondent did not answer the questions on case two.

4. Discussion

The data suggest that the use of local peripheral blocks is widely accepted among foot and ankle surgeons in Australia. Most surgeons prefer to use a GA combined with a local peripheral block. All surgeons used a tourniquet for the described cases; a thigh

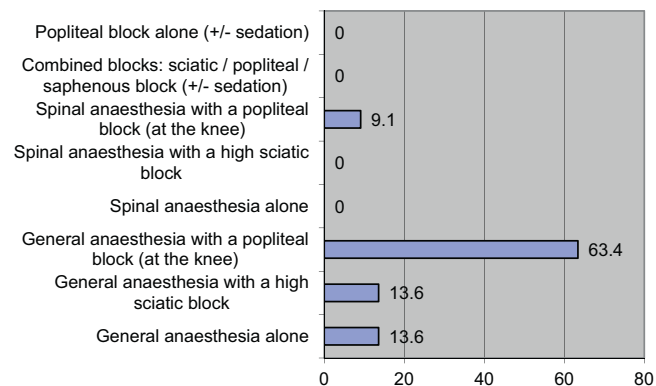


Fig. 3. Case 2: Type of anaesthesia preferred.

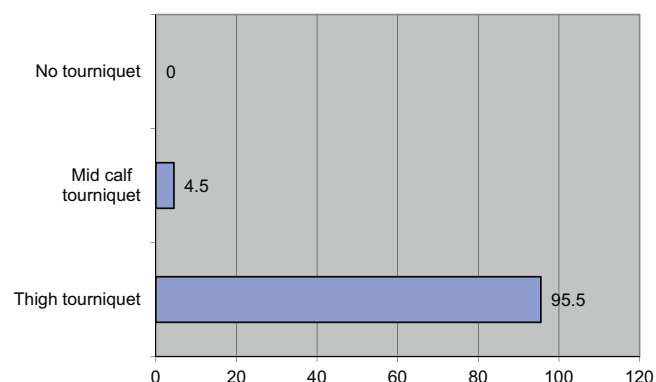


Fig. 4. Case 2: Type of tourniquet preferred.

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