Improving pre-operative peripheral nerve block provision in neck of femur fracture patients

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Background

Neck of femur fracture (NOF) patients may be predisposed to increased risks and reduced efficacy from opioid analgesia due to their age, comorbidities and confusion. Peripheral nerve blockade (PNB) by fascia iliaca block (FIB) is an effective method of improving pre-operative analgesia in this patient population[1].

Our centre trained two specialist nurses to independently provide FIBs as part of the acute pain service (APS). We present a closed-loop audit of this intervention, evaluating PNB provision to NOF patients before and after its introduction.

Methods

We retrospectively audited the 40 NOF patient case notes pre- and post-intervention. The overall audit standard was:

1) 50% of NOF patients should be offered pre-operative PNB.

Audit standards for at-risk subgroups specified that PNB should be considered for all patients:

2) At higher risk of side effects or complications from opioid analgesia
    i. MMTS < 9
    ii. Age > 85

3) Identified as being in moderate or severe pain
    iii. Subjective: NRS Pain score >6/10 after initial analgesia
    iv. Subjective: VRS Pain score > Moderate intensity
    v. Objective: Severe pain behaviour

We also anonymously surveyed orthopaedic nursing staff regarding block efficacy and impact on nursing care.

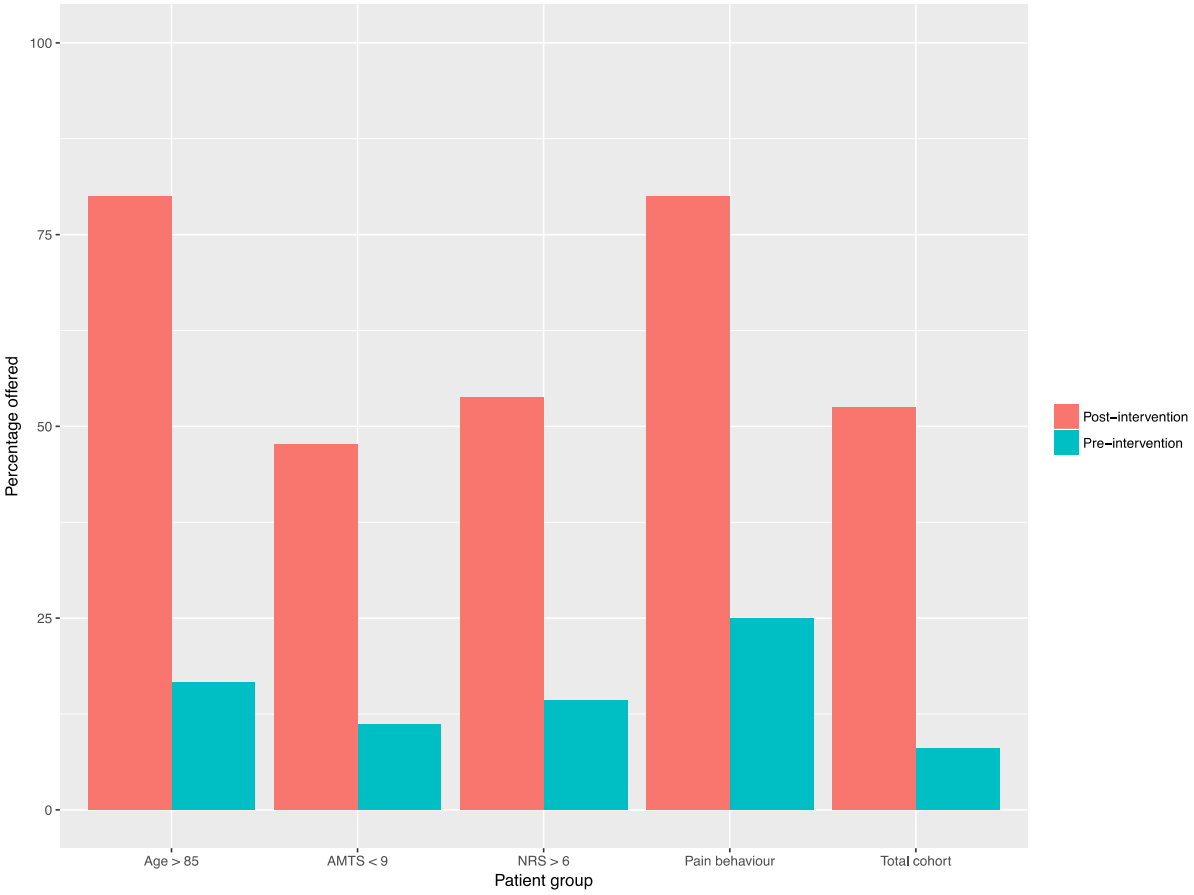
Statistical significance of proportion- and time-differences were assessed by Fisher's exact test and Mann Whitney U test respectively.

Results

In the post-intervention sample, a higher proportion of patients were offered (52.5% vs 13%, p=0.00025) and received PNB (38% vs 8%, p=0.003). Median admission-to-block times pre- and post-intervention were 30 hours and 13 hours 30 minutes respectively (p = 0.1). Subgroup results are presented in Figure 1.

100% of orthopaedic nursing staff surveyed reported improved analgesia and easier nursing care following FIB, though 35% reported that blocks were not provided early enough.

Figure 1: percentage of patients offered peripheral nerve block by subgroup



Conclusion

Following introduction of FIB capability to the APS, PNB provision for NOF patients improved from a poor baseline to meet the overall audit standard. This resulted in improved analgesia and facilitated easier nursing care.

Provision for at-risk patient subgroups and admission-to-block time both improved substantially but remained suboptimal. To further improve the service, we aim to expand FIB capability to A&E nurse practitioners and trauma nurses.

References

1. Candal-Couto JJ, et al. Pre-operative analgesia for patients with femoral neck fractures using a modified fascia iliaca block technique. *Injury* 36.4(2005):505-510.