

# Enhancing Enhanced Recovery: Implementation of Adductor Canal Blocks in Patients undergoing Total Knee Arthroplasty

Dr R. Digney, Dr A.M. Murphy, Dr R. Barr  
Altnagelvin Area Hospital, Northern Ireland.

## Background and aims

Altnagelvin Area Hospital is the main hospital for the North West of Northern Ireland. Its Trauma & Orthopaedic department services a catchment population of approximately 350,000. Total knee replacements (TKR) represent a significant proportion of the operations carried out by this department.

Facilitation of early mobilisation and discharge are key goals of Enhanced Recovery Programmes (ERP) for patients having TKR.

Controlling pain in this sub group is a difficult and intricate process.

International evidence suggests there are additional practices, such as Adductor Canal Blocks (ACB), that may improve post-operative pain and advance achievement of these objectives.

A significant driver for change was the positive impact of ACB in a similar local centre.

## Methods

Following engagement of key stakeholders, baseline pain scores, physiotherapy goals and analgesic requirements were collected prospectively from 22 patients undergoing TKR.

This data was presented to staff to highlight current practice and suggest a strategy to improve care.

Anaesthetic trainees were involved in data collection.

ACB have been implemented for all patients undergoing TKR, in addition to the standard ERP. The primary outcome measures are to improve pain scores and reduce consumption of rescue analgesia.

## Strategy for change

Following initial data collection from the baseline patient cohort, a focus was placed on delivering teaching and training to the anaesthetic orthopaedic consultants to ensure attainment of confidence in performing ACB.

## Results

The preliminary results (Table 1 and Figure 2) are extremely encouraging and suggest a significant improvement in pain scores following the implementation of ACB. It is hoped that this improvement will facilitate earlier mobilisation and reduced length of hospital stay.

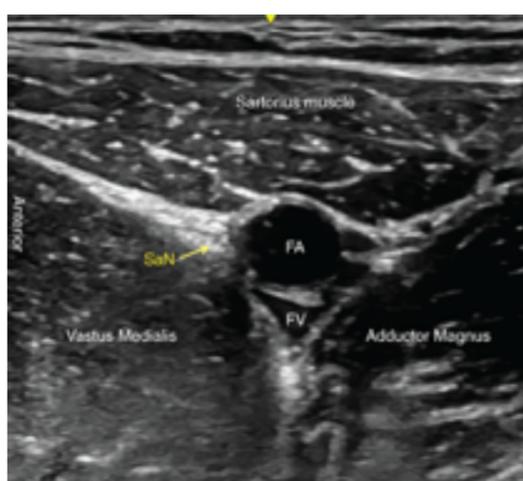


Fig1:US Adductor canal anatomy

## Results to date:

Table 1

		Baseline Data	With ACB
Number of patients		22	5
Median Pain Score (Numeric Rating Scale)	At rest	Day 0	3.5
		Day 1	4
		Day 2	3
	On Movement	Day 0	8
		Day 1	7
		Day 2	7
Time interval to Rescue analgesia (hrs:mins)		07:15	08:55

Pain score on movement on Day 1 postoperatively

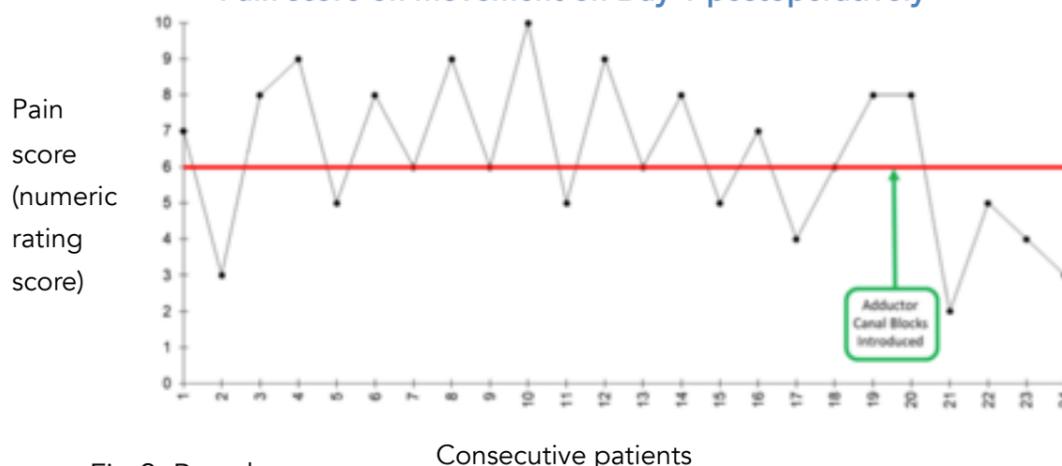


Fig 2: Run chart

## Discussion

The implementation of ACB has not only improved patients' hospital experience, but also united the multidisciplinary team and encouraged improvements in other areas of the ERP journey.

Physiotherapists are actively involved in achieving intensive therapy on the evening of surgery. Pharmacists are engaged in liaising with primary care to allow earlier discharge.

Utilising formal quality improvement methodology, we have successfully integrated new techniques into our practice with the goal of providing excellent patient care.

## Hope for the future moving forward

We strive to continue to raise the standard of care delivered to our patients. We hope that, as this enhanced recovery quality improvement project progresses, we will continue to improve patient outcomes.

## References

Aasvang EK, Luna IE, Kehlet H. Challenges in postdischarge function and recovery: the case of fast-track hip and knee arthroplasty. *British Journal of Anaesthesia*. 2015; 115(6):861-866

Rasouli MR, Viscusi ER. Adductor canal block for knee surgeries: An emerging analgesic technique. *The Archives of Bone and Joint Surgery*. 2017; 5(3):131-132

Jiang X, Wang QQ, Wu CA, Tian W. Analgesic efficacy of adductor canal block in total knee arthroplasty: a meta-analysis and systematic review. *Orthopaedic Surgery*. 2016; 8:294-300

Western Health and Social Care Trust. Enhanced recovery programme for total hip replacement and total knee replacement. 2017