The Effectiveness of Early Continuous Passive Movement on the Reduction of Postoperative Swelling and Pain Following Hip Arthroscopy:

A Randomised Single Blinded Controlled Study

Orlagh O'Shea, Shane Walsh, Patrick Carton
Hip and Groin Clinic, Whitfield Clinic, Waterford, Ireland

INTRODUCTION:

Extravasation of irrigation fluid into the thigh during hip arthroscopy results in considerable thigh swelling resulting in early post-operative discomfort and immobility. Early continuous passive motion (CPM) is routinely used following hip arthroscopy and may help alleviate thigh swelling, therefore improving pain and reducing analgesic requirements.

STUDY AIM:

The aim of this study was to examine the possible benefit of early CPM on the degree of post-operative thigh swelling, pain levels and use of analgesia following hip arthroscopy.

METHOD:

118 consecutive patients under going hip arthroscopy were randomised to either Group 1 (receiving CPM [Fig. 1] for 2 hours post-operatively) or Group 2 (receiving no CPM). For all patients the 'mid thigh circumference' was recorded pre-operatively, immediately following surgery and at 2 hours post-operatively (Fig. 3). The analgesic requirements during this 2 hour post-operative period were recorded (Fig. 2). The level of pain was assessed using the visual analogue scale (VAS) on arrival into recovery and at 2 hours post-operatively (Fig. 4).

The examiner taking the measurements was blinded as to whether the patient had received CPM. Information was collated and analysis performed using Microsoft Excel 2007 and SPSS.

Figure 1: CPM machine

RESULTS:

There was no statistical difference between the two groups when comparing change in thigh swelling, VAS pain scores and analgesic requirements over a two hour period following hip arthroscopy.

Figure 2: Analgesic Requirements

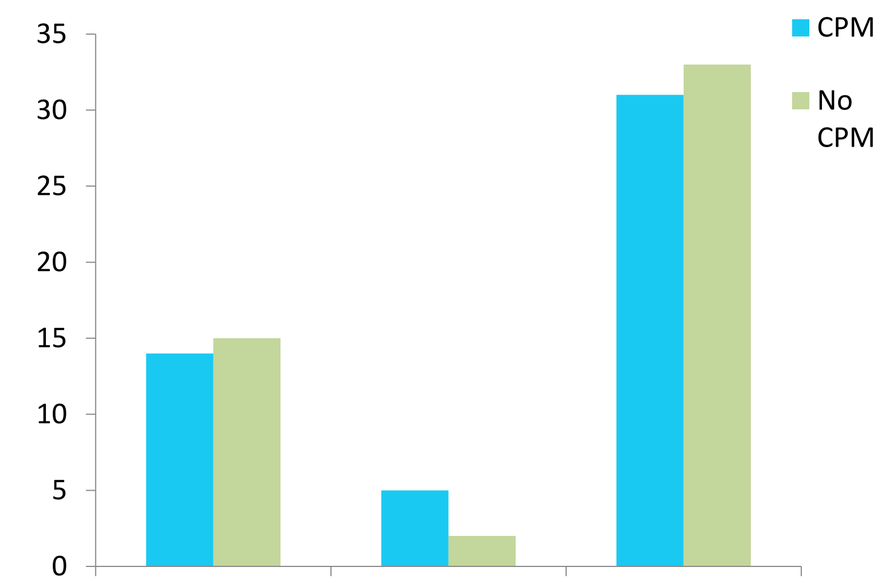


Figure 3: Mid thigh circumference

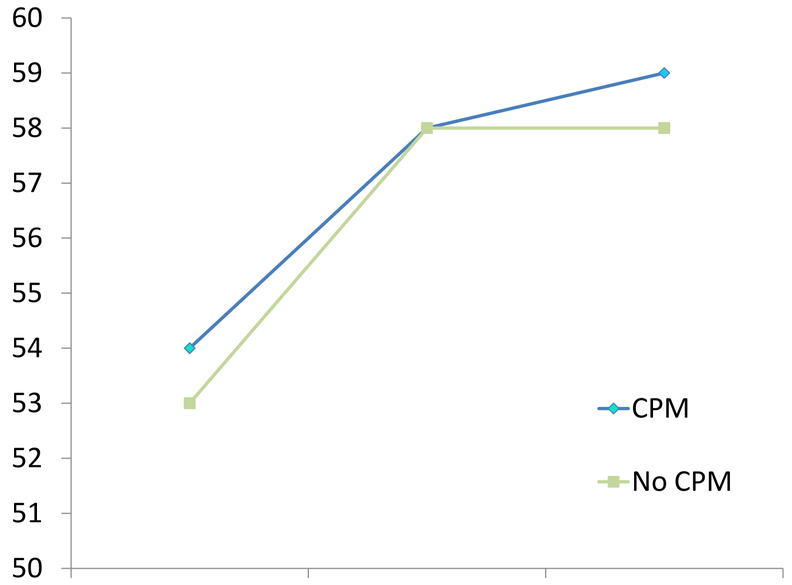
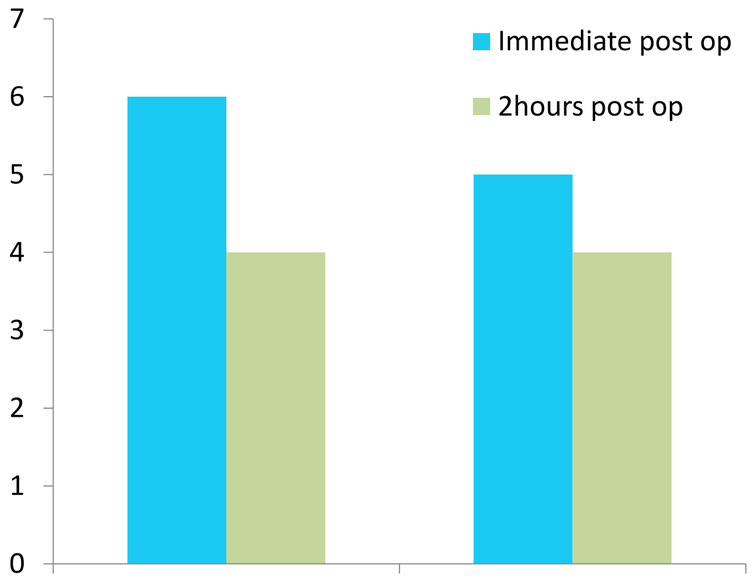


Figure 4: VAS Scores



CONCLUSION:

The early utilisation of CPM post hip arthroscopy has no apparent benefit in the reduction of thigh swelling, pain and analgesic requirements when used for 2 hours immediately post-operatively. There were a number of limitations of the study: CPM was performed only in recovery for a 2 hour period; a longer duration of CPM may be required for clinical benefit. Analgesia was provided acccording to clinical need as assessed by recovery staff rather than through a standardised study protocol; the timing of analgesic provision may have influenced VAS scores. A volumetric measurement of thigh swelling may prove more accurate than mid thigh circumference (used in this study) to assess change in thigh swelling.

IMPLICATIONS FOR PRACTICE:

Due to the findings of this study, early CPM following hip arthroscopy, which was routine in our unit, has now ceased. A further study is being considered which aims to address and improve on the limitations outlined above.

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