

A survey of perioperative multimodal analgesic regimes for laparoscopic gastric bypass surgery

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Introduction

Multimodal analgesia in bariatric patients undergoing laparoscopic gastric bypass surgery is highly effective [1]. We prospectively surveyed of how different analgesic practices at a specialist Bariatric Surgical Centre affects post-operative morphine usage in patients undergoing laparoscopic gastric bypass surgery.

Methods

We recorded cumulative post-operative morphine use via a patient-controlled analgesia (PCA) pump in 70 bariatric patients in three groups. PCA use was recorded for 24 hours from end of surgery.

All patients received intra-operative remifentanyl infusion titrated to weight and effect, paracetamol 2g IV, morphine 10-20mg IV, plus:

- 1.PCA alone group (11 female, 9 male; mean age 46yrs; mean BMI 46.6 kg/m²)
- 2.Non-intraperitoneal local anaesthetic (IPLA) group – PCA & intra-operative ketamine bolus 0.1-0.25 mg/kg (16 female, 10 male; mean age 46yrs; mean BMI 47.5kg/m²)
- 3.IPLA group – PCA, intra-operative ketamine bolus 0.1-0.25 mg/kg & 20mls of sub-diaphragmatic 0.25% bupivacaine [1] (14 female, 10 male; mean age 48yrs; mean BMI 46.6kg/m²).

The choice of analgesic regime was dependent on the anaesthetist and surgical team preference and experience, resulting in groups of similar size with comparable distributions of age, sex and BMI. No formal group allocation or randomisation took place.

Statistical analysis performed using Students unpaired t-test.

Results

The PCA alone group used a mean of 56.3mg (range 4-96mg) of morphine, whilst the non-IPLA group used a mean of 67.1mg (range 8-185mg). The addition of a single bolus of ketamine probably confers no extra analgesic benefit except in the first 30mins of recovery and may increase overall morphine use, although the result is not significant ($P = 0.14$).

The addition of intraperitoneal local anaesthetic resulted in a significant reduction in morphine use at all times during 24hrs. The IPLA group used a mean of 37.4mg of morphine (range 10-77mg) and this difference was statistically significant (P value = 0.001) when compared to the non-IPLA group.

References:

1. Kahokehr A, Sammour T, Srinivasa S, Hill G. Systematic review and meta-analysis of intraperitoneal local anaesthetic for pain reduction after laparoscopic gastric procedures. *British Journal of Surgery*. 2011; 98:29-36
2. Pasqualucci A, De Angelis V, Contardo R. et al. Pre-emptive Analgesia: Intraperitoneal Local Anaesthetic in Laparoscopic Cholecystectomy: A randomized, double-blind, placebo-controlled study. *Anesthesiology*. 1996; 85: 11-20.

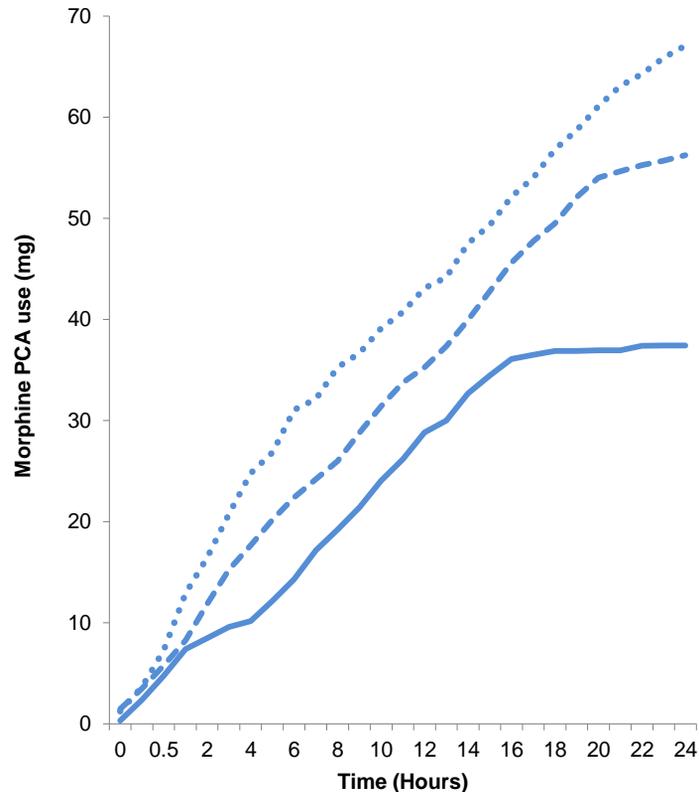


Figure 1 Hourly morphine PCA use: PCA only group (dashed line); non-IPLA group (dotted line); IPLA group (solid line).

Discussion

The results of this survey suggests that IPLA may play an effective role in the multimodal analgesic strategy for patients undergoing laparoscopic gastric bypass surgery [1, 2].

However, the relatively small number of patients in our sample and the study design limit the interpretation and potential application of these results.

This survey can act as a feasibility study to support further exploration of the benefits of intraperitoneal local anaesthetic in laparoscopic gastric bypass surgery. This in turn could lead to reduced complication rates from morphine usage, early patient mobilisation and discharge.