

# A Retrospective Service Evaluation of Children's Analgesic Requirements Post-Appendicectomy: Is PCA/NCA Provision Obligatory?



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## Why

Appendicitis appears frequently in paediatric populations  
Surgical intervention is usually required and is often painful  
Patient- / nurse-controlled analgesia (PCA/NCA) is now widely implemented,<sup>1</sup> but has well established side effects  
Aim: to review current analgesic strategies and identify potential avenues to enhance post-operative pain relief

## How

Retrospective clinical note review conducted at Nottingham Children's Hospital following local governance approval  
Included: Fifty-four children aged 0 to 18 years, who received urgent surgical intervention for acute appendicitis over a 6-month study period (April - September 2020)

## Findings

Participants: 74% ♂ and 26% ♀; mean age = 10.3 years (SD = 3.8)

### Exclusions:

- Non-operative treatment (n=2)
- Interval appendicectomy (n=2)
- Other pathology (n=1)

Suspected Appendicitis (n=59)

Urgent Appendicectomy (n=54)

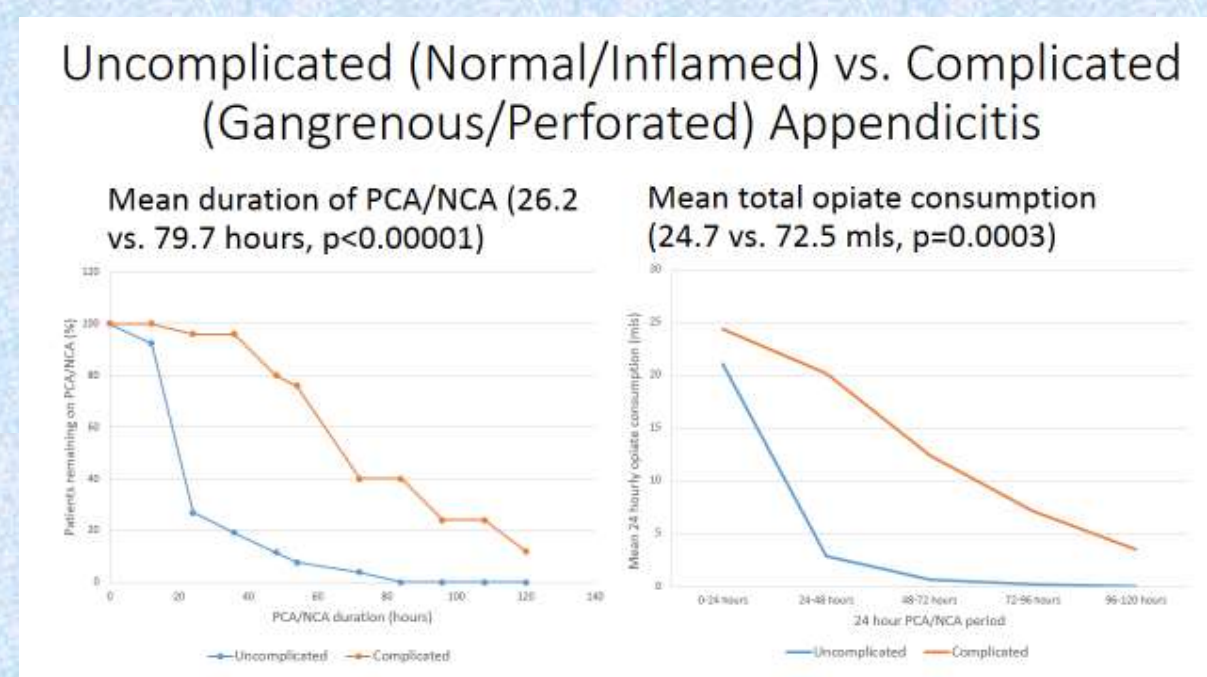
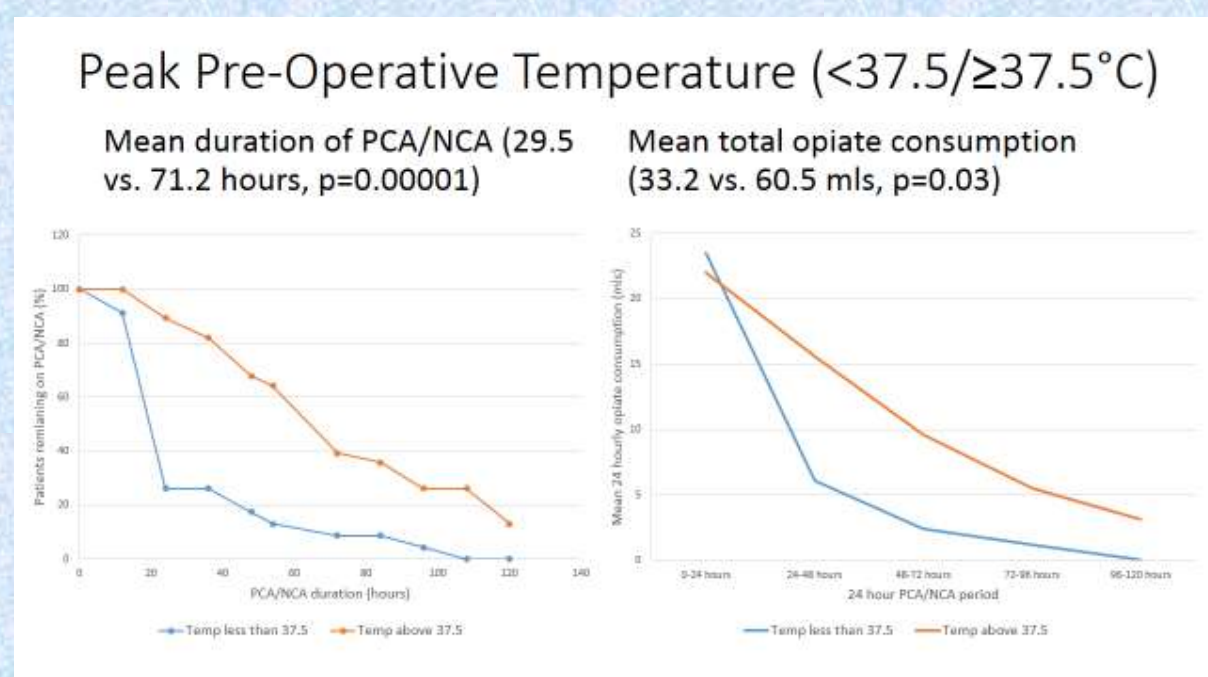
PCA or NCA (n=51)

No PCA or NCA (n=3)



Adverse effects	PCA/NCA (n=51)	Oral analgesia only (n=3)	p-value
Nausea	14 (28%)	0 (0%)	0.00001
Pruritis	4 (8%)	0 (0%)	0.0003
Length of stay (days) (mean ± SD)	4.8 ± 2.1	1.7 ± 0.5	0.044

Certain markers were associated with both duration of PCA/NCA and total opiate consumption:



These and 2 additional markers were also associated with PCA/NCA duration < 24 hours:

- Peak pre-operative temperature < 37.5°C (p=0.00005)
- WCC < 15,000/μL (p=0.04)
- Uncomplicated appendicitis (p=0.00006)
- Laparoscopic surgical technique (p=0.005)



## Review

Whilst PCA/NCA represents a valuable analgesic modality for many children post-appendicectomy, two findings of this study suggest that some children can be successfully managed without:

- 1). 0/3 children commenced on oral analgesia only post-operatively required parenteral opiate conversion
- 2). 33% of children required PCA/NCA therapy for < 24 hours

Evidently, in certain collective circumstances (see criteria), it seems possible to manage post-appendicectomy pain without a PCA/NCA

### Criteria for Not Requiring PCA/NCA

- Peak pre-operative temperature < 37.5°C
- WCC < 15,000/μL
- Uncomplicated appendicitis (normal or inflamed macroscopic appearance of appendix)
- Laparoscopic surgical technique