



EMERGENCY PAEDIATRIC APPENDICECTOMIES- AN AUDIT OF OUR CURRENT PRACTICE 10 YEARS ON

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Background

Emergency appendicectomy is a common paediatric surgical procedure. Post operative pain can vary depending on severity and duration of illness as well as patient factors. In our institution, all emergency appendicetomies receive patient or nurse controlled opioid analgesia along with a multimodal analgesic regime consisting of NSAIDs, paracetamol with local anaesthetic infiltration or ultrasound-guided abdominal wall blocks, based on well-established data [1].

Aim

To review the current analgesic strategies offered to paediatric patients requiring appendicectomy comparing with practice 10 years ago.

Methodology

Prospective and retrospective data collection. Inclusion criteria were all paediatric patients [age 0-18 years] undergoing emergency appendicectomy. Audit 10 years ago looked specifically at postoperative opioid requirements in children undergoing laparoscopic vs open appendicectomies.

Results

There were 46 surgeries in 2009, 28 (61%) were open procedures vs 53 surgeries in 2019 (rate = 91/year. In 2019, the presence of a perforated appendix had a significant impact on duration of PCA (1.8 vs 2.9 days, $p=0.007$) and length of stay (3.3 vs 6.6 days, $p<0.001$) but not on 24 hour morphine consumption (0.46mg/kg vs 0.47mg/kg, $p=0.96$). All abdominal wall blocks (QL/TAP), which were introduced recently, were performed preoperatively, using either 0.25% or 0.125% L-Bupivacaine to 2mls/kg. The presence of an abdominal wall block, did not yield any significant differences. Remaining results are compared in Table 1.

Discussion

There has been an upward trend in surgical workload, 98% increase rate. 44% reduction in open procedures. More operations performed with younger and smaller children. An increase in morphine consumption in 2019. No significant differences between laparoscopic/open procedures or perforated/intact appendices. Unfortunately, when comparing block(B) vs no block (NB) in perforated appendices there was no significant difference (NB;n=8,0.41mg/kg; B, n=5,0.54mg/kg; $p=0.42$). In 2019 data, 6 patients did not receive NSAIDs due to contraindications and amongst those patients, 2 received a block.

	2009		2019	
Data collection	12 months		7 months	
	Laparoscopic n=18	Open n=28	Laparoscopic n=44	Open n=9
Age (years)	10 [7-12]	10 [8-12.5]	9 [5.5-11]	8 [6-10]
Weight (kg)	39.5 [24-45.1]	36.3 [27.5-48.3]	30 [22-40.2]	30 [24-47]
Male : Female	12:6	16:12	28:16	7:2
Perforated appendix	4/18 (22%)	8/28 (28%)	10/44 (23%)	6/9 (67%)
Operation length (min)	81.5	81.1	99.9	77.1
Abdo wall block (Y:N)	0:18	0:28	19:25	3:6
24hr Morphine (mg/kg)	0.32 [0.16-0.49]	0.38 [0.25-0.53]	0.39 [0.29-0.59]	0.4 [0.23-0.57]
Duration of PCA (days)	2 [0.5-2]	3 [2-4]	2 [1-2]	3 [2.75-3.25]
Length of stay (days)	4 [3-5]	5.5 [3-7]	3 [2-4]	5.5 [5-6]

Table 1

Take home message

Surgical demand has increased over past 10 years

Recent introduction of abdominal wall blocks has yet to yield a difference

More laparoscopic procedures are done requiring less PCA use and patients can go home sooner

Further work looking into abdominal wall blocks and potential benefits in certain patient subsets

References

1. Liu, Y., Seipel, C., Lopez, M.E., Nuchtern, J.G., Brandt, M.L., Fallon, S.C., Manyang, P.A., Tjia, I.M., Baijal, R.G. and Watcha, M.F. (2013), A retrospective study of multimodal analgesic treatment after laparoscopic appendectomy in children. *Paediatr Anaesth*, 23: 1187-1192. doi:[10.1111/pan.12271](https://doi.org/10.1111/pan.12271)