

Perioperative Management of the Pediatric Chronic Pain Patient

-What Anesthesiologists Need to Know-

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07 March 2014



Conflicts of Interest

- None to disclose

Cases

- 14yo healthy anxious female with chronic generalized pain and deconditioning on metoprolol, pyridostigmine; for wisdom tooth extraction
- 15 yo male with pectus excavatum for Nuss procedure
- 12yo female with relapsed ALL with headache for a lumbar puncture

Objectives

- Characterize the impact of chronic pain in the perioperative period
- Discuss strategies for acute pain management in the context of chronic pain
- Describe the strategy of chronic pain rehabilitation

Impact of Chronic Pain

- Chronic pain is common
- Pertinent Issues
 - Medical diagnoses
 - Medications
 - Psychosocial factors
- Acute surgical pain and chronic pain
 - Chronic pain patient coming for surgery
 - Poorly controlled acute pain that develops into chronic pain

Epidemiology

- Pediatric chronic pain in school sample
 - 15-37.3% of children (Simons 2012, Huguet 2008)
 - May underestimate prevalence
- Functional disability
 - Varying disability >30%
 - 3-10% greatly disabled (Hechler 2010)
- HRQOL lower for children with chronic non-cancer pain
- Medical utilization
 - Mean annual cost per adolescent £8000 (\$16000)
- Twenty-fold increase in healthcare consultations

Medical Diagnoses of Chronic Pain Patients

- Headache, abdominal pain, generalized pain, CRPS
 - Spinal cord/peripheral nerve stimulators
- Sickle cell, cancer, IBD, etc.
- Deconditioning and POTS
 - Dizziness, spells, tachycardia, nausea
- Nutritional challenges
 - G-tubes, port-a-cath

Medications

- Opioids
 - Buprenorphine
 - Benzodiazepines
 - Muscle relaxants
 - Clonidine
 - Diphenhydramine
 - Scopolamine
 - Ondansetron
 - Amitriptyline/nortriptyline
 - Gabapentin/pregabalin
- Metoprolol/propranolol
 - Fludrocortisone
 - Midodrine
 - Pyridostigmine
 - IVIG
 - Methylphenidate
 - Dextroamphetamine

Medications

- Opioids/buprenorphine
- Benzos/muscle relaxants/diphenhydramine
- Scopolamine
- Ondansetron/amitriptyline/nortriptyline
- Gabapentin/pregabalin

Medications

- Metoprolol/propranolol
- Fludrocortisone
- Midodrine
- Pyridostigmine
- IVIG
- Methylphenidate/dextroamphetamine

Psychosocial Issues

- School attendance
- Delay in functional milestones
- Enmeshed parents
- Anxiety/panic/PTSD
- Mood disturbances

Strategies of Acute Pain Management in the Context of Chronic Pain

- Three categories of patients
 - Chronic non-cancer pain
 - Extensive surgery
 - Cancer

Pre-anesthetic Management

- Consider oral premedication
 - Midazolam, acetaminophen
 - Gabapentin for extensive procedures?
- Allow patient to make age-appropriate choices
 - Mask induction vs. peripheral IV
 - Parental presence in OR?
- Be aware of effects of medications
 - Ketamine on anxiety/nightmares
 - Synergistic medication effects

Prevention of Post-operative Pain

- Regional techniques
- Intraoperative ketamine?
- Scheduled adjunctive medications
 - Acetaminophen
 - NSAIDS (ketorolac, ibuprofen)
 - Neurontin
 - Lidoderm patches
- Non-pharmacologic strategies
 - Distraction, diaphragmatic breathing
- Communicate these plans to patients

Management of Acute on Chronic Pain

- Ask about patient's 'baseline pain' level
- Ask about functional limitations at home prior to surgery
- Communicate expectations
 - Some pain is normal
 - Activity level
 - IV vs PO pain medications
- Provide opportunity to ask questions

Opioid Management

- Restart home pain medications as appropriate
 - Opioids, adjunctive medications
 - Oxycodone 10mg q 6 hours, i.e.
- Provide appropriate pain medications specific for surgical procedure
 - Fentanyl PCA, i.e.
 - Caution with multiple sedating drugs
 - benzodiazepines, diphenhydramine, etc.

Theory of Chronic Pain Rehabilitation

- Ensure appropriate and thorough medical evaluation
- Encourage school attendance and engagement in life from the beginning
- ‘Children first, patient second’
- Empowerment/self-esteem
- Introduce non-pharmacologic and biobehavioral pain management strategies as early as possible

Take Home Points

- Ask about patient's concerns
- Restart home medications
- Communicate appropriate expectations
- Multimodal treatment for pain
- Team involvement

References

- Farrell C. 2012. Perioperative management of patients taking treatment for chronic pain. *BMJ*.344:e4148 doi: 10.1136/bmj.e4148.
- Fortier MA. 2011. Acute to chronic postoperative pain in children: preliminary findings. *Journal Pediatr Surgery*.46:1700-05.
- Hays S. 2012. Pain, Pain, Go Away! Older drugs, newer options for pediatric perioperative pain management. Refresher Course Pediatric Anesthesiology.
- Hechler T. 2010. Commentary: A worldwide call for multimodal inpatient treatment for children and adolescents suffering from chronic pain and pain-related disability. *Journal Pediatric Psychology*.35(2):138-40.
- Huguet H. 2008. The severity of chronic pediatric pain: an epidemiological study. *The Journal of Pain*.9(3):226-36.
- Simons
- Vetter TR. 2008. A clinical profile of a cohort of patients referred to an anesthesiology-based pediatric chronic pain medicine program. *Anes analg*.106(3):786-94.