ISPCOP SESSION: OPTIMIZING PERIOPERATIVE CARE IN PATIENTS WITH OBESITY

Management of Pain in High-Risk Patients with Obesity

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ACUTE PAIN
BARIATRICS

Do all your ***Acute Pain Roads*** lead to the proverbial ***Opioid Home?***

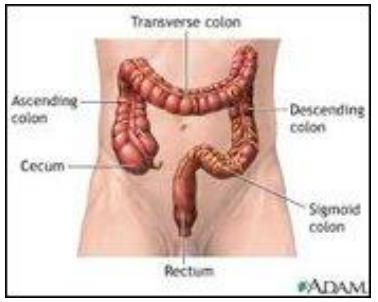
- 65F/ BMI42: Chronic Pain & Opioids. Postop TKR (**GA**) in PACU- **Pain Crises**!
- 42M/ BMI55: Lap sigmoidectomy (GA), **converted** to open- **Postop orders?**
- 32F/ BMI46: spine **readmitted** 7d- pain & Ileus. **Analgesia**?

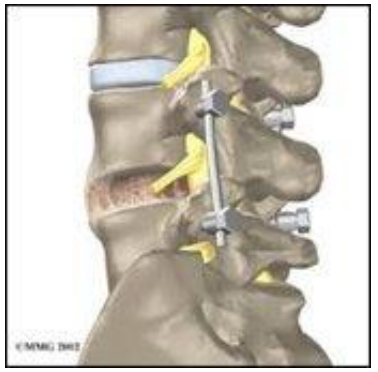
IVPCA

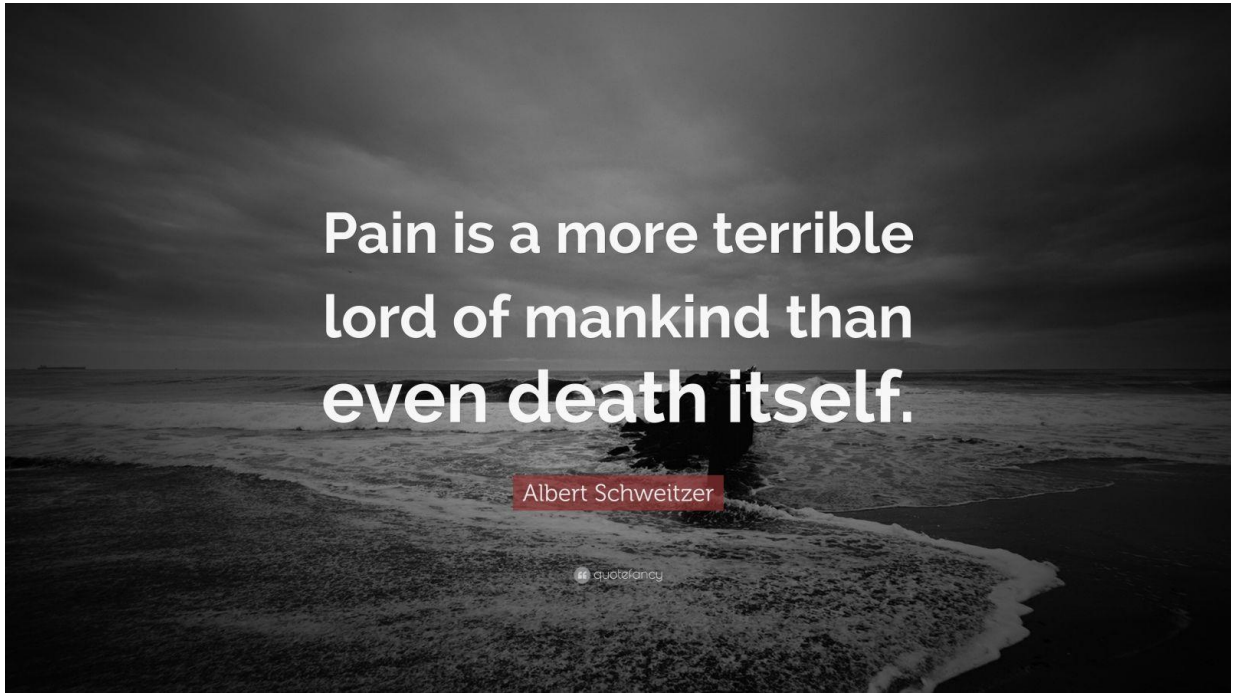
?Ketamine

?Regional

?Lidocaine



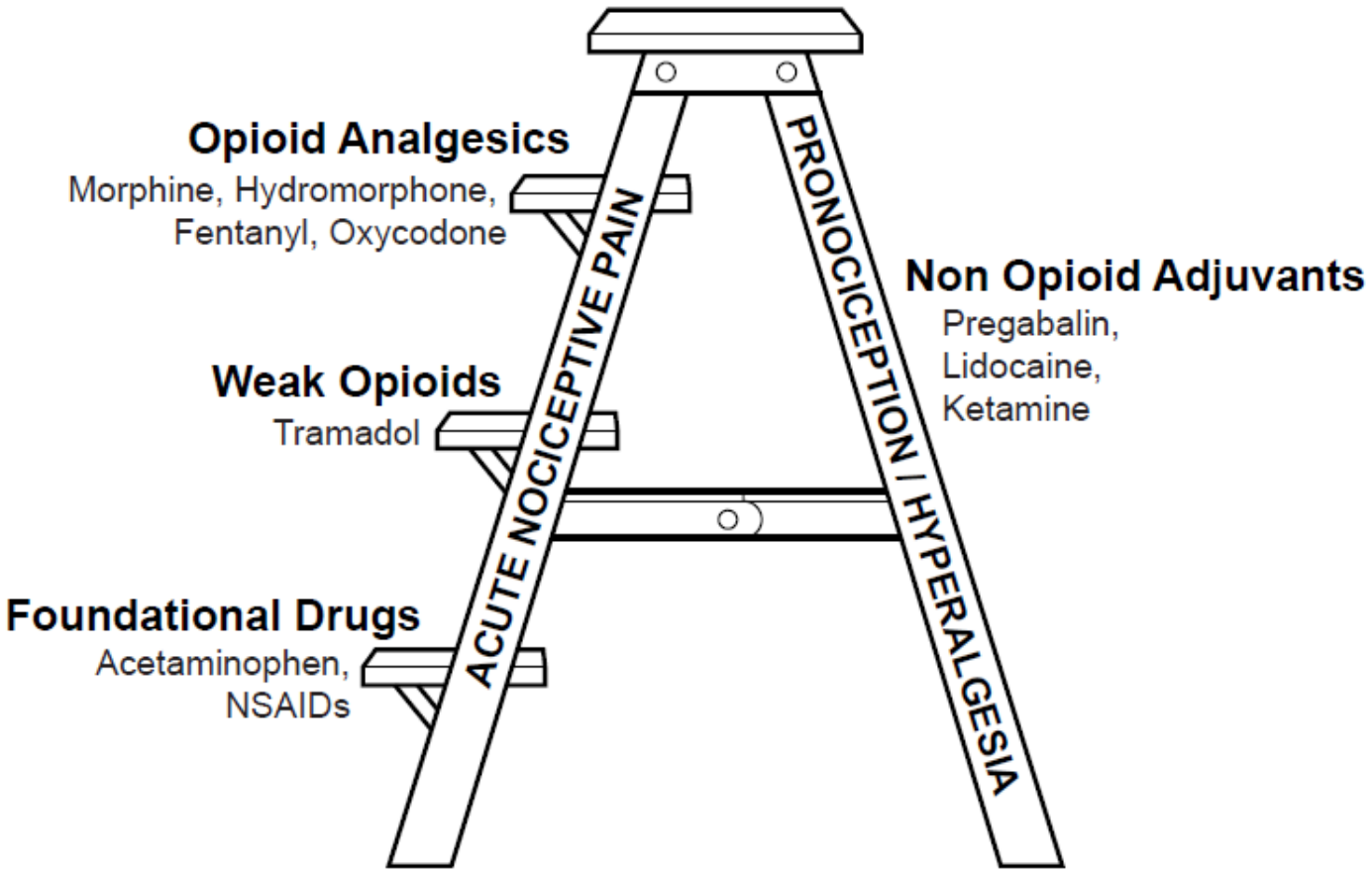




OBJECTIVES

1. Revisit Multimodal Analgesia
2. Perioperative Strategies in Patients with Severe Obesity
3. Acute Pain Management- Future Direction

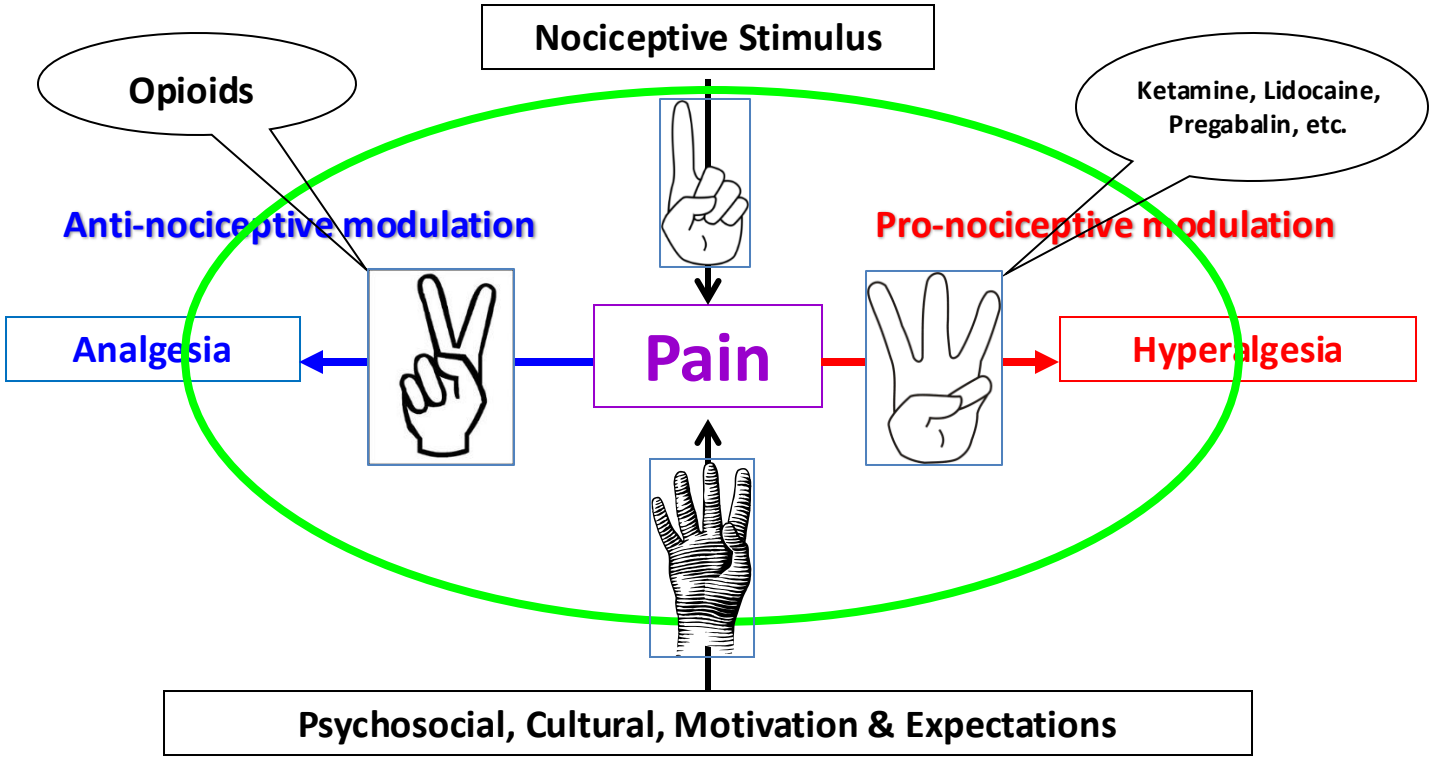
How do we *do* Multimodal Analgesia?



The New "Ottawa" Ladder in Acute Pain?

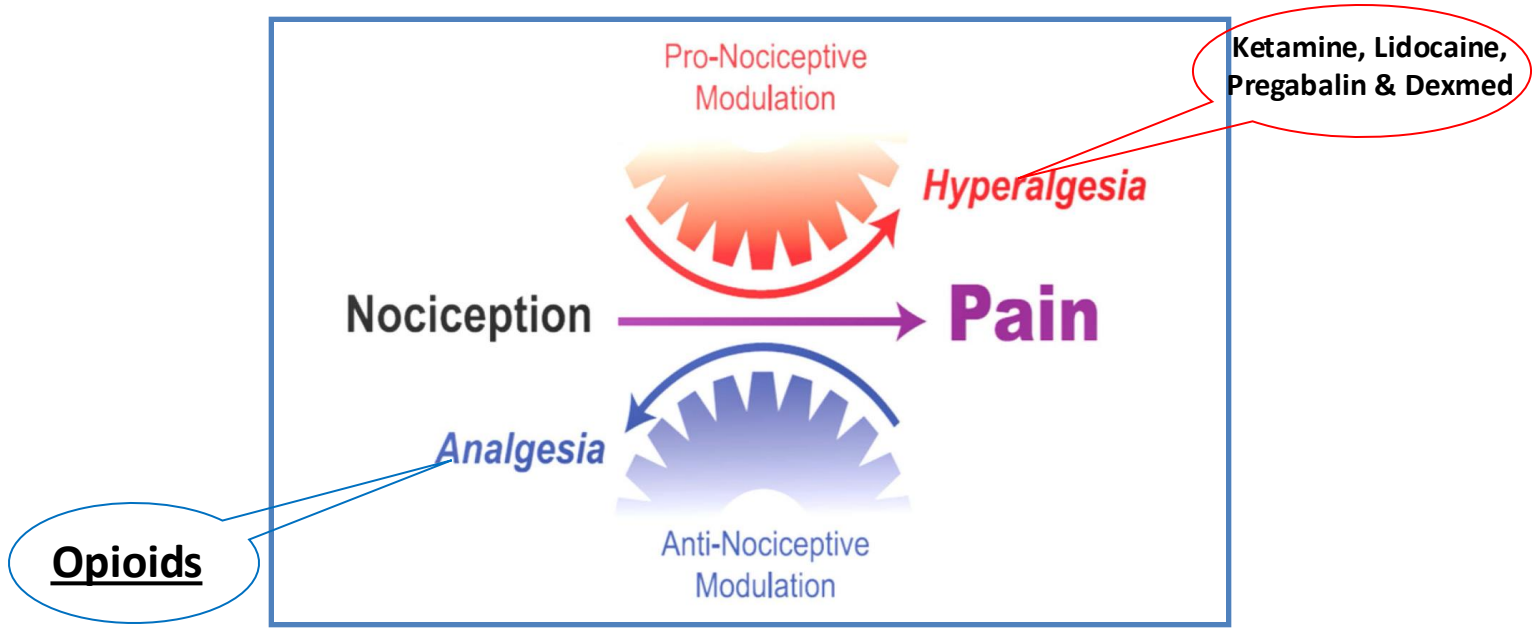
BJA Education

The Four Dimensions of Pain



Dr. John Penning
Medical Director, Acute Pain Service,
(Founded in 1989) The Ottawa Hospital.

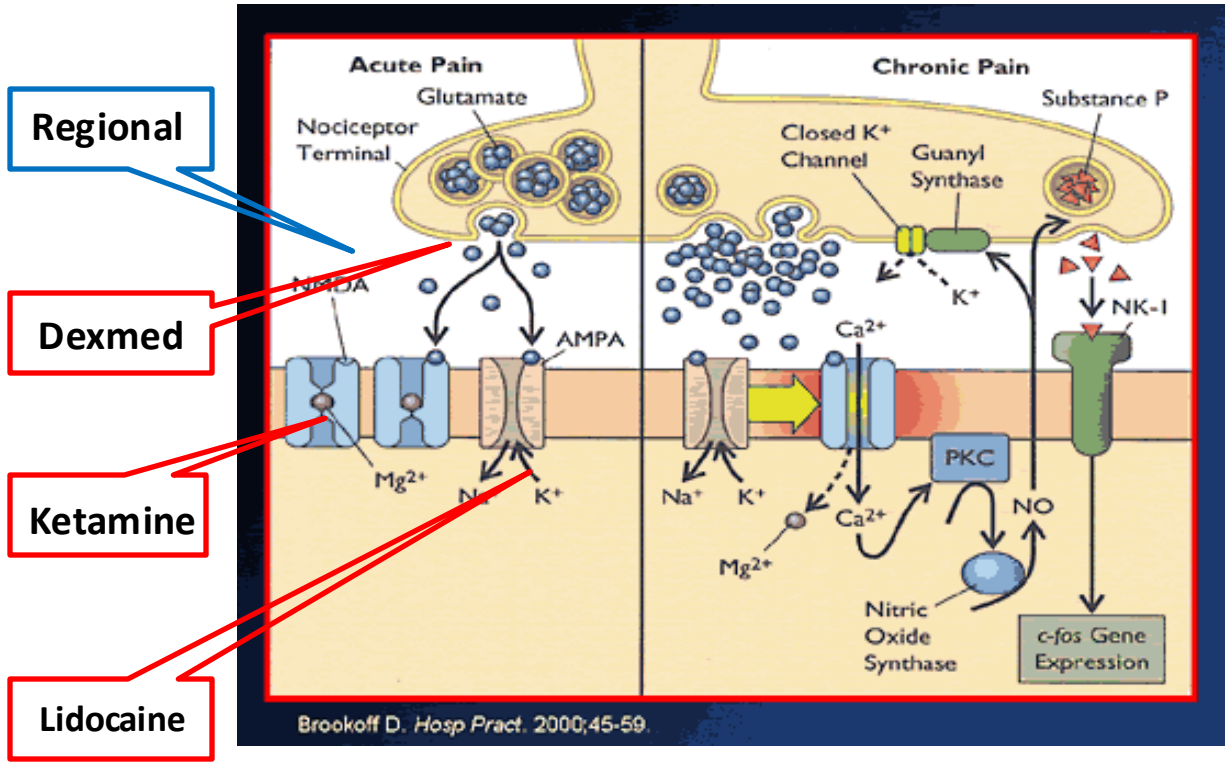
Why Worry about Analgesia & Hyperalgesia?



Effect of pronociceptive and anti-nociceptive mechanisms on perception of pain.
Ottawa Anesthesia Primer copyright 2012 Fig. 17.6 (by John Penning, with permission).

Why worry
There should be laughter after pain
There should be sunshine after rain
These things have always been the same
So why worry now
Why worry now ***Mark Knopfler 1985***

Why Worry Now about Acute Hyperalgesia?
-Prevent the progression to Persistent & Chronic Pain



Eipe N. Peri-operative Ketamine for Acute Pain Management. In Analgesia in Major Abdominal Surgery. Edited by Anton Krige and Michael J. P. Scott. Springer 2018; 5: 65- 82.

How do we make the Diagnosis of Acute Pronociception?

DN4 – QUESTIONNAIRE

To estimate the probability of neuropathic pain, please answer yes or no for each item of the following four questions.

INTERVIEW OF THE PATIENT

QUESTION 1:

Does the pain have one or more of the following characteristics?	YES	NO
Burning	❑	❑
Painful cold	❑	❑
Electric shocks	❑	❑

QUESTION 2:

Is the pain associated with one or more of the following symptoms in the same area?	YES	NO
Tingling	❑	❑
Pins and needles	❑	❑
Numbness	❑	❑
Itching	❑	❑

EXAMINATION OF THE PATIENT

QUESTION 3:

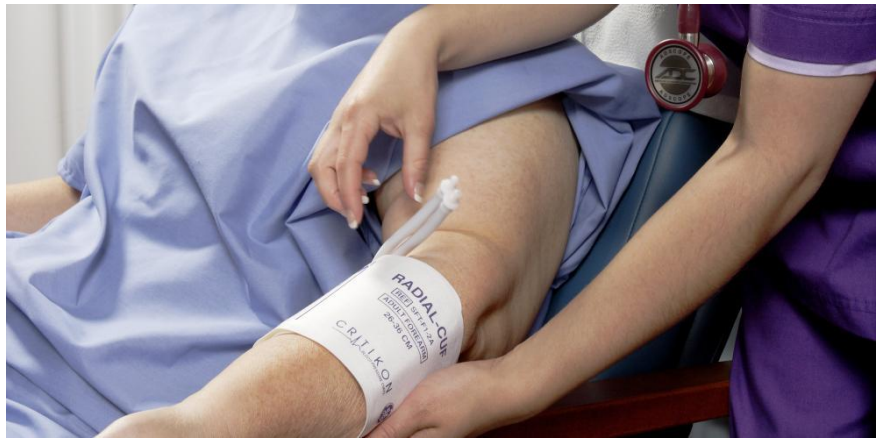
Is the pain located in an area where the physical examination may reveal one or more of the following characteristics?	YES	NO
Hypoesthesia to touch	❑	❑
Hypoesthesia to pinprick	❑	❑

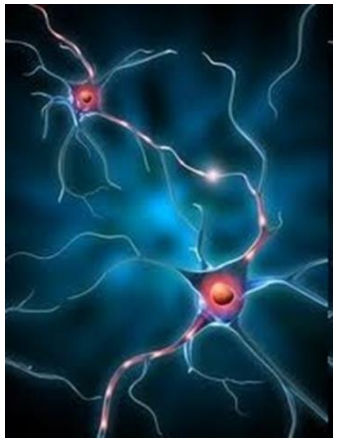
QUESTION 4:

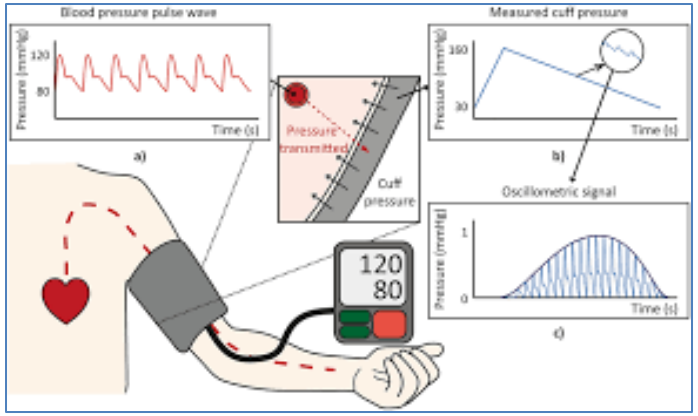
In the painful area, can the pain be caused or increased by:	YES	NO
Brushing?	❑	❑

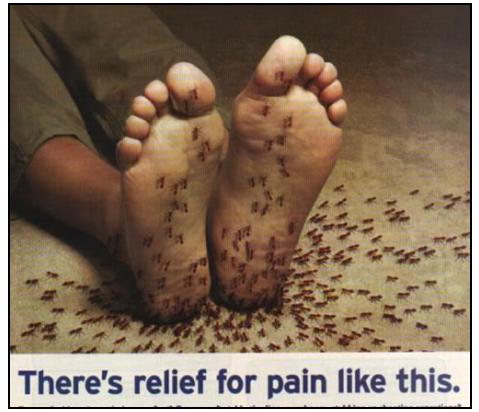
YES = 1 point
NO = 0 points

Patient's Score: /10







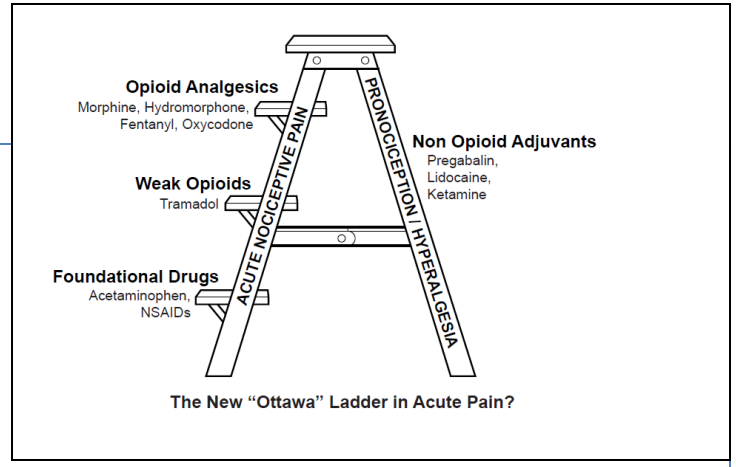


1. Bouhassira D, et al. Comparison of pain syndromes and development of a new neuropathic **pain diagnostic questionnaire (DN4)**. Pain. 2005
2. Vargas A, et al. Sphygmomanometry-evoked allodynia--a **simple bedside test** indicative of fibromyalgia... J Clin Rheumatol. 2006
3. Eldin C, et al. Evaluation of **pain susceptibility** by taking blood pressure in patients... Medicine (Baltimore). 2021
4. Chandran AB, et al. **Sphygmomanometry-evoked allodynia** in chronic pain patients with and without fibromyalgia. Nurs Res. 2012.

2. Perioperative Strategies in Patients with Severe Obesity

Rembrandt: Tobias Returns Sight to His Father. *1636.*

First Two Steps



The New "Ottawa" Ladder in Acute Pain?

Step 1- Foundational Analgesia

Acetaminophen (max 4g/day) **+** NSAIDs « *First On/ Last Off* »

- Sole drugs for mild nociceptive & inflammatory pain
- Well tolerated and +30-50% opioid sparing

IV Acetaminophen

? Increase dose or frequency in Obesity, caution with NASH & Hepatic Dysfunction

Step 2- Tramadol or Tapentadol

- Inherent Multimodal- Opioid, Adrenergic & Serotonergic
- Appropriate Sx models & ethnicities +30% opioid sparing.
- N&V, Serotonin Syndrome

1. Allegaert K, BMC Anesthesiol 2014;14:77.
2. Song K, Pharmacotherapy 2014;34:14s–21s.
3. De Baerdemaeker L,. Curr Opin Anesthesiol 2016, 29:119 – 128
4. Saurabh S. Surg Obes Relat Dis. 2015; 11:424–30.
5. Bamgbade OA.. Obes Surg. 2017; 27:1828–34

Step 3- Opioids

Opioids- Unfortunately ubiquitous!

- SAEs- Sedation, Resp. Dep., N&V, Confusion and Mood
- **Opioid Induced Hyperalgesia**
- Long term- Tolerance, dependance, addiction and diversion

Obesity- OIVI potentiation, OSA interactions, other sedative Rx & PORC

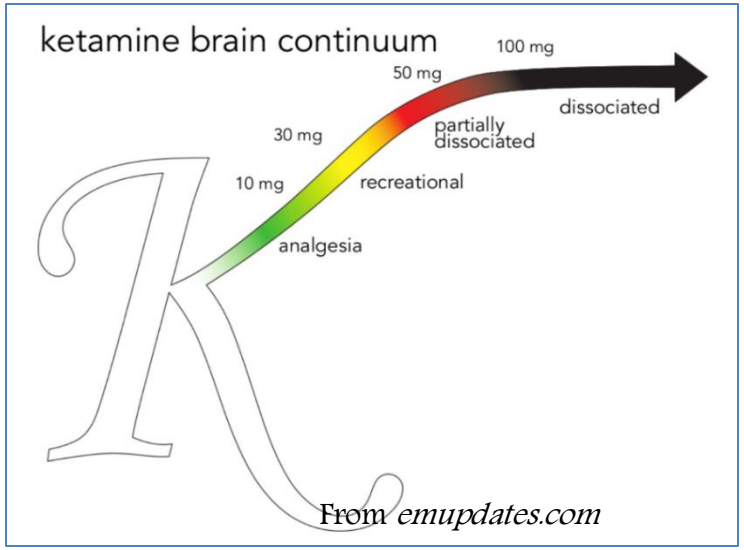
- Route of administration: Cont.Infusions>*Neuraxial>IM-SC>IVPCA=PO prn
- Opioid titration & **Naloxone** reversal- CO2 narcosis & **Bicarb** levels
- The Deadly Triad- Obesity, OSA and Opioids- **Dead In Bed Syndrome**?

Opioid (Free &) Sparing (Anesthesia &) Analgesia-

1. Regional Anesthesia- Spinals, Epidurals, Wound Catheters
2. Stepwise, severity-based approach with **Anti Hyperalgesics**

1. Budiansky AS, Eipe N, Margarson M. Surg Obes Rel Dis. 2017; 13:523-32.
2. Belcaid I, Eipe N. Drugs. 2019;79:1163-1175.
3. Eipe N, Budiansky AS. Saudi J Anaesth. 2022;16:339-346.
4. Budiansky AS, Eipe N. BJA Educ. 2024;24:318-325.

Ketamine- the King of Pain!



- ✓ Parenteral Analgesic most suitable for moderate to severe pain
- • Ultra Low dose AntiHyperalgesic (DN4+) for Opioid Resistant Pain*
- • Morbid Obesity ± OSA (undiagnosed, untreated or non-compliant)
- • Dose Dependant Effects & SE: Rescue Analgesic **5-10mg** IV bolus & 5 -10 mg/hr infusion
- • Reduces pain, opioid needs & SE (PONV & sedation), improves mood & function
- ✓ Low Cost, wide Availability, Familiarity, Efficacy & Safety!

1. Tawfic Qa, Eipe N, Penning J. CJA 2014; 61: 86-87.
2. Tawfic QA. J Opioid Manag. 2013; 9:379-88.
3. Kamal HM. J Med Sci. 2008; 8:364-70.
4. Radvansky BM. Biomed Res Int. 2015; PMID 26495312
5. Schwenk EJ, RAPM 2018; 43: 455-465.

Lidocaine- to the Rescue!

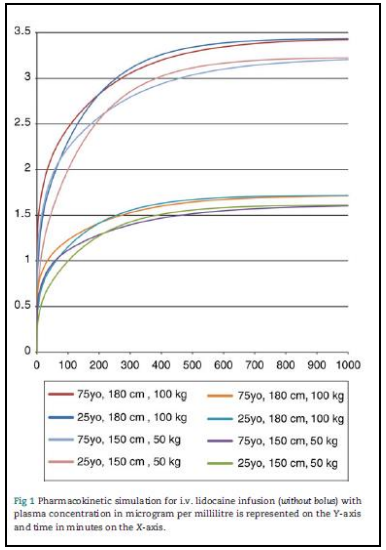


Fig 1 Pharmacokinetic simulation for i.v. lidocaine infusion (without bolus) with plasma concentration in microgram per millilitre is represented on the Y-axis and time in minutes on the X-axis.

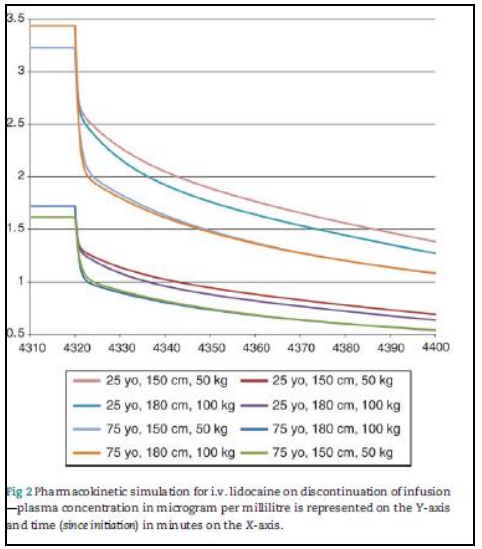


Fig 2 Pharmacokinetic simulation for i.v. lidocaine on discontinuation of infusion —plasma concentration in microgram per millilitre is represented on the Y-axis and time (since initiation) in minutes on the X-axis.

- ✓ Parenteral Analgesic suitable for **GI** surgery, ERAS, Spines & Trauma.
- • Potent anti-inflammatory, reduces stress, protects/ prevents/ treats ileus
- • Continuous Infusions: 1 - 2 mg/kg **IdealBW**/hr for 24-48hrs and beyond
- • Slow Onset, Long Duration & Preventative Analgesia
- • Use as an alternative to Epidurals/Regional Blocks, for Chronic & Cancer pain
- ✓ Low cost & wide availability, develop own protocols & experience!

1. Dunn LK, Anesthesiology. 2017; 126:729-37.
2. De Oliveira GS Jr., Obes Surg. 2014;24:212-8.
3. Eipe N. BJA Educ. 2016; 16: 292-98.
4. De Olivera K, Eipe N. Drugs Real World Outcomes 2020; 7:205-12
5. Foo I, Eipe N et al. Anaesthesia 2021; 76: 156-60

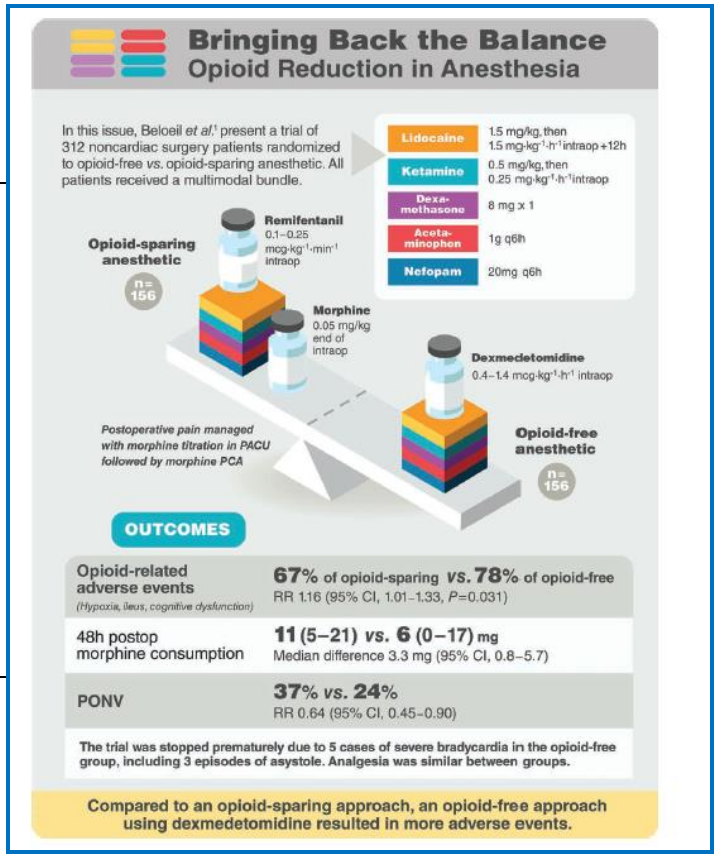
Dexmedetomidine for Obesity/OSA

ANESTHESIOLOGY

Balanced Opioid-free Anesthesia with Dexmedetomidine *versus* Balanced Anesthesia with Remifentanil for Major or Intermediate Noncardiac Surgery

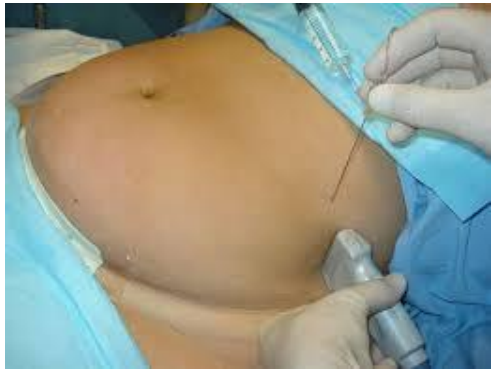
The Postoperative and Opioid-free Anesthesia (POFA) Randomized Clinical Trial

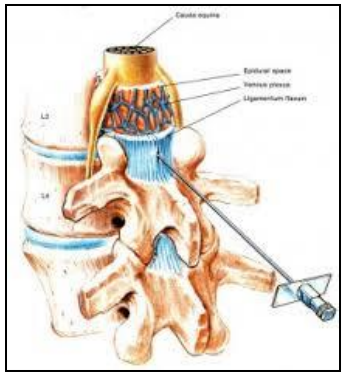
- ❖ Parenteral Sedative, Analgesic, Antihyperalgesic for **obesity**
- **Dexmedetomidine**: 0.4- 0.7 mcg/kg **IdealBW**/hr
- Slow Onset, Intermediate Duration & Hemodynamic stability
- **OSA-** undiagnosed, untreated or non-compliant
- Reduces postoperative pain, confusion, agitation, shivering and delirium
- Directly reduces opioids and indirectly PONV, but can delay discharge
- Opioid Free & Sparing Anesthesia **#OFSA**

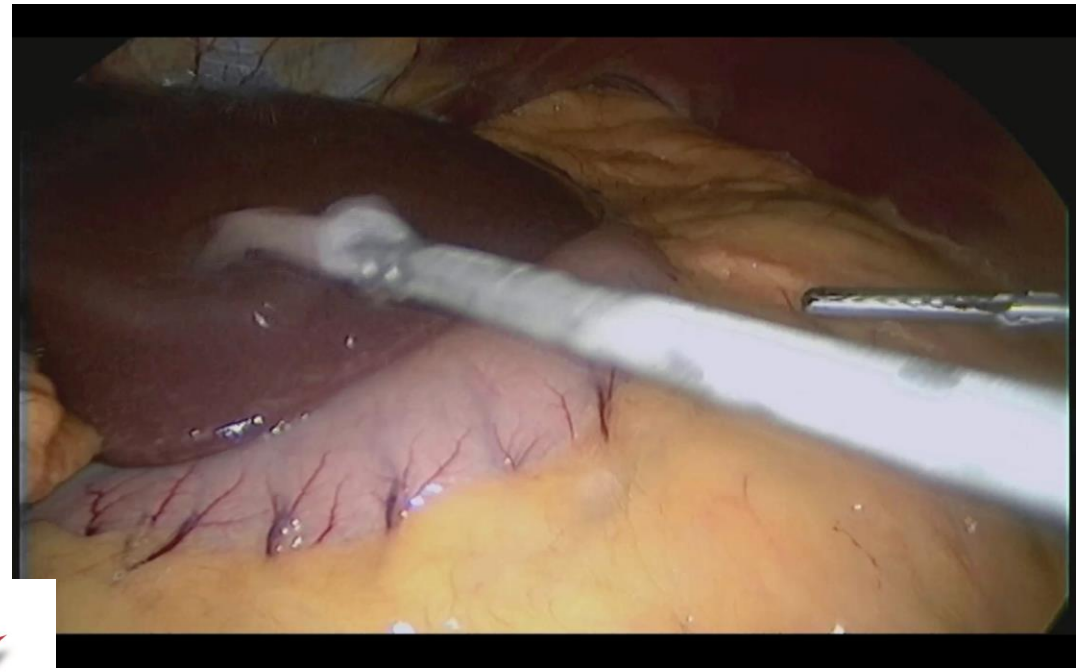


1. Blaudszun G. Anesthesiology. 2012; 116: 1312–22.
2. Singh PM. Surg Obes Relat Dis. 2017;13:1434-46.
3. Cortínez L, Eur J Clin Pharmacol. 2015;71:1501-08.
4. Xu B. J Anesth. 2017; 31:813-20.
5. Ziemann-Gimmel P. BJA: 2014; 112:906–911.

Regional Techniques in Severe Obesity







Open access Protocol

BMJ Open **Randomised, double-blinded, placebo-controlled trial to investigate the role of laparoscopic transversus abdominis plane block in gastric bypass surgery: a study protocol**

Amer Jarrar ,[1] Adele Budiansky,[2] Naveen Eipe,[2] Caolan Walsh,[1] Nicole Kolozsvari,[1] Amy Neville,[1] Joseph Mamazza[1]

Canadian Journal of Surgery
Journal canadien de chirurgie

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Research

Effect of intraperitoneal local anesthesia on enhanced recovery outcomes after bariatric surgery: a randomized controlled pilot study

Amer Jarrar, Naveen Eipe, Robert Wu, Amy Neville, Jean-Denis Yelle and Joseph Mamazza
Can J Surg November 10, 2021 64 (6) E603-E608; DOI: https://doi.org/10.1503/cjs.017719

Postoperative Analgesia in Obesity

Opioid Sparing Analgesia

- ✓ Foundational Analgesia & Opioids only as needed
- ✓ Regional Techniques
- ✓ **DN4**- Anti Hyperalgesic Adjuvants- Ketamine, Lidocaine (or Dexmedetomidine)
- ✓ [PO- Pregabalin, Clonidine & Nortryptiline]

IV PCA: Same bolus dose, duration and lock out limit

- ✓ NO basal or continuous Infusions
- ✓ Ketamine plus PCA- Ratio Ketamine : Morphine (1:1)

PONV- Dexamethasone + Ondansetron

Monitoring- Location & Duration- Protocol Driven vs Tailor Made?

Review Article

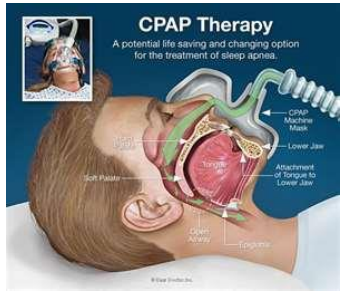
Perioperative Pain Management in Bariatric Anesthesia

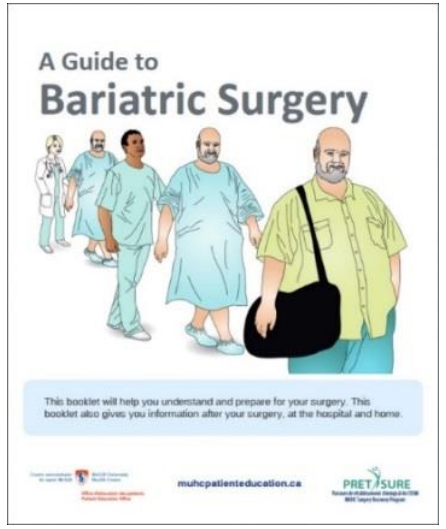
NAVEEN EIPE, ADELE S. BUDIANSKY
Department of Anesthesiology and Pain Medicine, University of Ottawa, Ottawa, ON, Canada

3. Acute Pain Management- Future Direction

6 MIN. WALK TEST

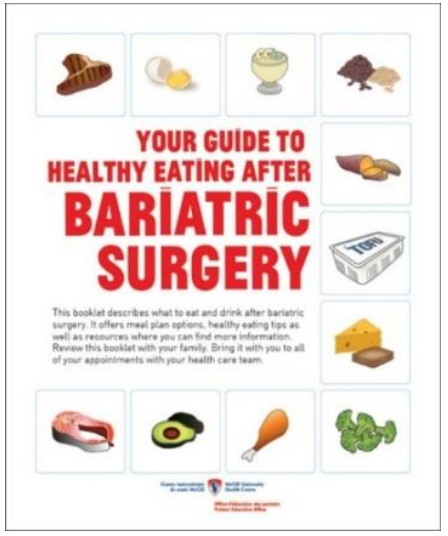
PEFR





Preoperative- Educate, Engage & Empower

1. Pain evaluation & optimization- Transitional Pain Service **(TPS)**
2. OSA- diagnosis, treatment & compliance
3. Education: Smoking & Alcohol cessation, Diet & **Exercise**
4. Engagement: consistent messaging using apps- Seamless MD™
5. Empowerment: Functional **Prehabilitation** (6MWT & PEFR)



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2. Cozowicz C, Chung F, Anesth Analg. 2018
3. Wu R, Haggar F, Porte N, Eipe N,. BMJ Open. 2014
4. Jarrar A, Budiansky A, Eipe N, BMJ Open. 2020
5. Jarrar A, Eipe N, Wu R, Can J Surg. 2021

Improving Acute Pain begins *before* the Perioperative Journey!

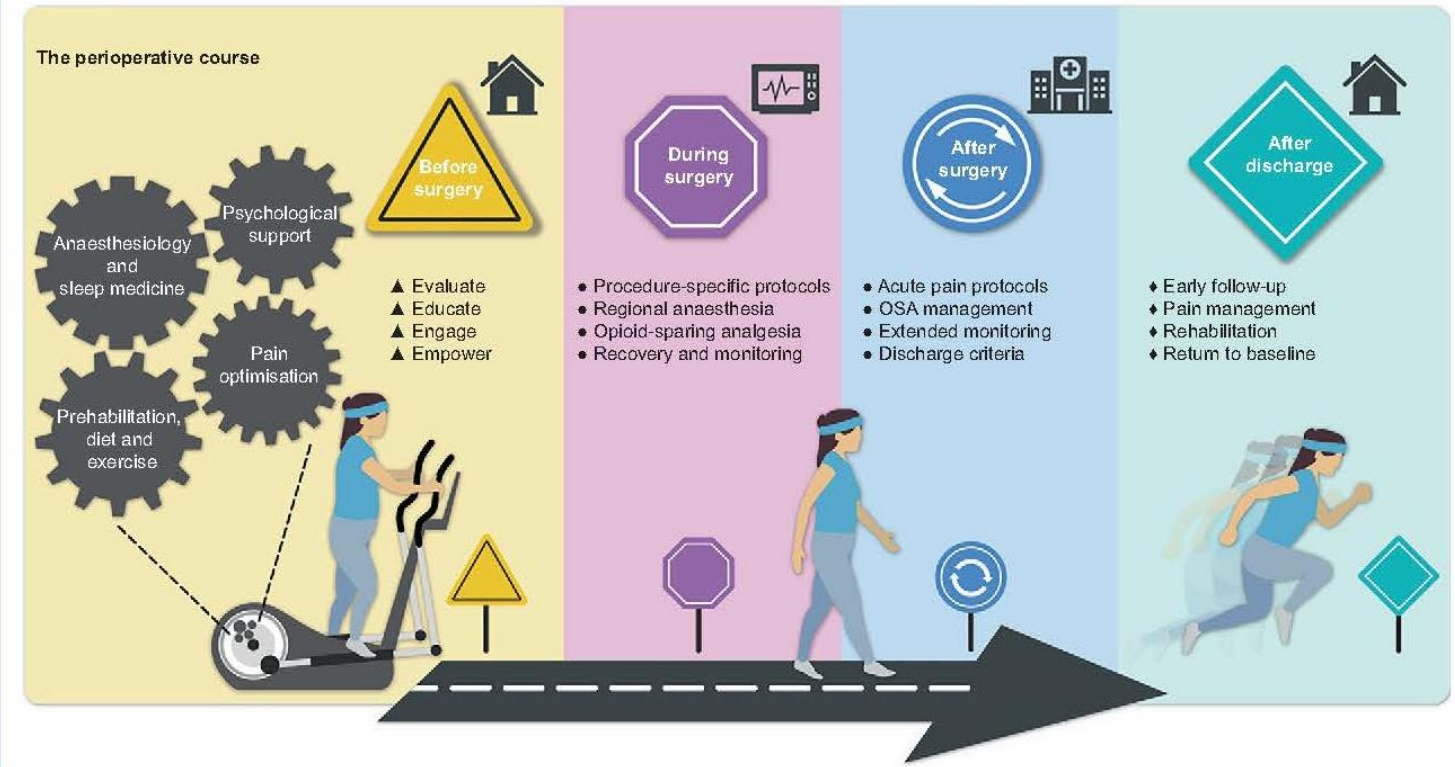


Fig 1 The perioperative course. [Adapted with permission from Walters TL and colleagues https://doi.org/10.1111/pme.12796].[10] Improving the safety and outcomes of acute pain management in patients with severe obesity begins with preparation and optimisation before surgery. Standardised evidence-based analgesic protocols are required for the intraoperative period followed by appropriate monitoring and discharge criteria. Adequate follow-up can ensure return to baseline function after discharge. OSA, obstructive sleep apnoea. Illustration by Perry Ng.

ELSEVIER

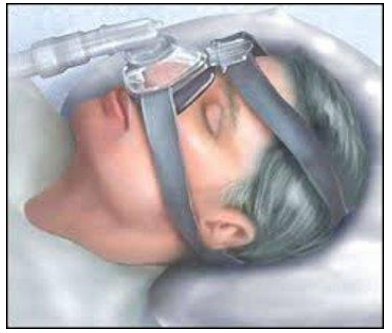
BJA Education, 24(9): 318–325 (2024)

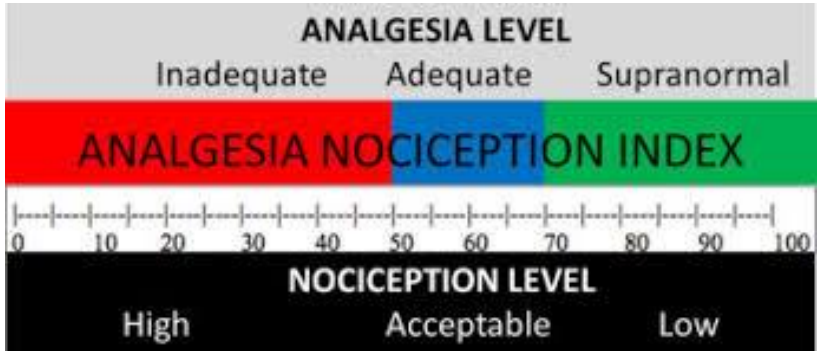
doi: 10.1016/j.bjae.2024.04.006
Advance Access Publication Date: 31 May 2024

Acute pain management in patients with severe obesity

A.S. Budiansky and N. Eipe*

Future of Acute Pain Management in Severe Obesity





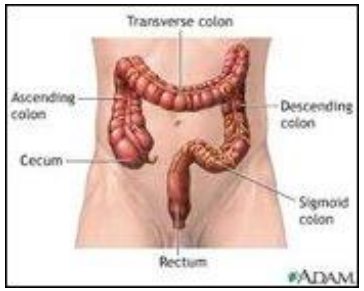
- 55F/ BMI42: Chronic Pain & Opioids. Postop TKR (GA) in PACU- **Pain Crises**!
- 63M/ BMI45: Lap sigmoidectomy (GA), converted to open- **Postop orders?**
- 42F/ BMI36: spine fusion readmitted 7d- poorly controlled pain & Ileus. **Analgesia**?

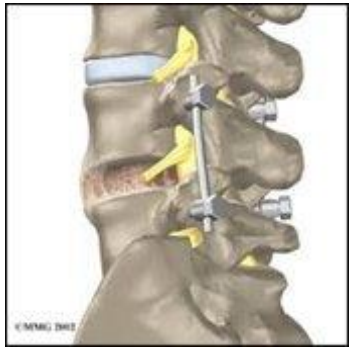
IVPCA

Ketamine

Regional

Lidocaine







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