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Recent Publications Impacting Ambulatory Anesthesia Practice

Girish P. Joshi, MB, BS, MD, FFARCSI
Professor of Anesthesiology and Pain Management

DISCLOSURE: Consultant Baxter International Inc.

1

Reengineering in Surgical Paradigm

- Ambulatory surgery facilitates patient-centered care
- Improves postoperative outcomes and reduces healthcare costs
- ASC meets triple aim of healthcare
  - Patient satisfaction, value, population health
- Hospital environment is associated with fasting, sleep disturbance, immobilization, infection, medication errors

Where Is the Value in Ambulatory Versus Inpatient Surgery?
Friedlander DF, et al: Ann Surg 2021; 273: 909–16

oregon.gov/oha/HPA/dsi-pcpch/Pages/Patients.aspx

2

Hospitalization: Patient Safety

- Despite advances in medical science, there remain important gaps in patient safety
- Retrospective cohort study assessed frequency, severity, and preventability of patient harm
  - 11 Massachusetts hospitals, n=2809
- Preventable events occurred in ~7%
  - 1% were serious–substantial intervention or prolonged recovery
- Adverse drug events were most common, followed by surgical/procedural events, and patient-care events (falls, pressure ulcers, healthcare associated infections)

Bates DW, et al: N Engl J Med 2023; 388: 2

3

Ambulatory Colectomy Surgery
Perioperative Framework For Same Day Discharge

Institution has considerable experience with implementation of ERAS protocols

Surgery Characteristics
- Elective surgery
- Minimally invasive approach (lap or robotic)
- Colonic or high rectal surgery
- No requirement for stoma creation

Patient Selection
- ASA 1 or 2, BMI<30
- No anticoagulant/antiplatelet use
- Good home support/ patient compliance
- Proximity and access to healthcare facility

Surgical Considerations
- Uncomplicated surgery
- No conversion to open surgery
- No requirement for drains/oral tubes
- Removal or urinary catheter at end

Anesthetic Considerations
- Fast-track anesthetic (no sedatives)
- Opioid-sparing analgesia
- PONV prophylaxis
- Minimal fluids

Immediate Postoperative Period: Resume oral intake and ambulation

Discharge Criteria: Satisfies PADSS, Tolerated major meal, able to ambulate able to urinate, unremarkable abdominal exam and laboratory results

Do not wait for return of GI function

Post-Discharge: Home care nursing, surveillance platforms, follow-up at POD7 -10,

Tan JKH, et al: Surgery 2022; 172: 869-77

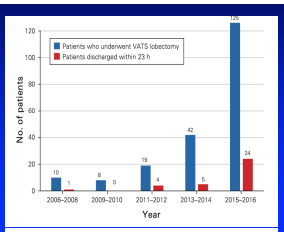
4

Feasibility analysis for the development of a video-assisted thoracoscopic (VATS) lobectomy 23-hour recovery pathway

Dumitra TC, et al: Can J Surg 2020; 63: E349-E358

Categories considered in predictive modelling of 23-h LOS

Category	Candidate predictors
Patient characteristics	Age, sex, distance from hospital, no. of comorbidities, COPD, smoking status, smoking pack-years, DLCO, FEV$_1$, ASA classification
Tumour characteristics	Pathologic stage, clinical stage, indication for resection
Surgical factors	Surgeon, era of surgery, surgical complications, chest tube duration, operative time* longer than 120 min, total duration of surgery† longer than 180 min, time of surgery (am v. pm), PACU duration longer than 150 min, lobe removed, additional resection



Predictors of LOS: clinical stage and surgeon

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ERAS For Ambulatory Surgery:
Multidisciplinary, Reduce variability

Preoperative	Intraoperative	Postoperative
Procedure/Patient Selection	Fast-track GA	Post-discharge Care/monitoring
Identify/Optimize comorbidities	Pain/PONV prophylaxis	Patient-related outcomes
Minimal fasting	Hemodynamic Mgmt	
Pre-habilitation	Ventilation	
Patient education	Normothermia	
Minimally Invasive	SSI prophylaxis	
	VTE prophylaxis	

Joshi GP: Curr Opin Anesthesiol 2021; 34: 667-71

6

Preoperative Considerations

7

Preoperative Optimization and Risk Reduction

- Identify and optimize comorbid conditions
- Screen for frailty in high-risk patients
  - Frailty influences postoperative outcomes, independent of age and comorbidity
- Pre-habilitation
  - Exercise, nutritional, cognitive-behavioral interventions
  - Reduces frailty, improves functionality

Telemedicine for preanesthesia evaluation: review of current literature and recommendations for future implementation

Curr Opin Anesthesiol 2021; 34: 672–7

Omaira Azzad and Girish P. Joshi

- Burdensome regulations removed and payments improved since COVID-19
- Efficient, reduces costs
- Reduces anxiety, improves satisfaction
- Allows triaging for further evaluation
- Limitation: Lacks face-to-face interaction, ability to perform an actual physical exam

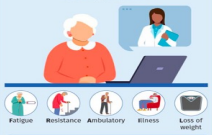
8

Association Between the FRAIL Scale and Postoperative Complications in Older Surgical Patients: A Systematic Review and Meta-Analysis

Gong S, et al: Anesth Analg 2023;136:251–61

FRAIL Scale: A Suitable Preoperative Frailty Screening Tool for Older Patients

Screening methods used to assess "frailty" or a state of age-associated vulnerability may not be suitable for virtual assessments, particularly with older surgical patients



Can the FRAIL scale assessment, which can be conducted virtually, predict postoperative outcomes in older surgical patients?

	Description	Grade
Fatigue	Are you fatigued?	All/most of the time = 1 Some/a little/none of the time = 0
Resistance	Do you have difficulty walking up one flight of stairs without assistance?	Yes=1; No=0
Ambulatory	Do you have difficulty walking one block without assistance?	Yes=1; No=0
Illness	Do you have more than 5 illness?	Yes=1; No=0
Loss of Weight	Have you lost more than 5% of your weight in the past year?	Yes=1; No=0

Scoring: robust (score = 0), prefrail (score = 1–2), and frail (score = 3–5)

9

Preoperative Fasting

- Minimize duration of preop fasting
- Avoidance of preop dehydration
  - Encourage water intake throughout the fasting period: provide specific advice
  - Allow water if patient complaints of thirst until 30-60 min preop
    - Consider the 6-4-0 rule
- No benefit of complex carbohydrates, simple carbohydrates may be used to improve thirst, hunger, satisfaction

Postoperative nausea and vomiting after unrestricted clear fluids before day surgery

McCracken GC, Montgomery J: Eur J Anaesthesiol 2018; 35: 337-42

6-4-0 rule reduced the rates of PONV

Network meta-analysis of the effect of preoperative carbohydrate loading on recovery after elective surgery

Amer MA, et al: Br J Surg 2017; 140: 187-97

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2023 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting: Carbohydrate-containing Clear Liquids with or without Protein, Chewing Gum, and Pediatric Fasting Duration—A Modular Update of the 2017 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting*

Girish P. Joshi, M.B.B.S., M.D. (Co-Chair),

ANESTHESIOLOGY 2023; 138:132–51

- Reaffirms the previous recommendations for clear liquids until 2 h preoperatively
- Simple or complex carbohydrate– containing clear liquids appear to reduce hunger compared with noncaloric clear liquids
- Addition of protein to carbohydrate-containing clear liquids did not seem to either benefit or harm healthy patients
- Do not delay surgery in healthy adults chewing gum; however, confirm the gum removal prior to induction of GA

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Association of a Liberal Fasting Policy of Clear Fluids Before Surgery With Fasting Duration and Patient Well-being and Safety

Marsman M, et al: JAMA Surg 2023; 158: 254-63

- Prospective quality improvement study
  - Stepwise introduction of a liberal fluid fasting policy
  - Allow clear fluids (up to 1 glass of water) until arrival at the OR
- Of the 76,451 adult patients for elective surgery, 78% followed standard policy, and 22% followed liberal policy
- Implementation of liberal policy: reduced mean fasting duration by 3 h with median fasting of 1 h
- Liberal approach reduced thirst, PONV, and antiemetic use
- No significant increase in regurgitation/aspiration

12

Kratom: Peri-anesthetic Implications

- Kratom, herbal extract sold as an alternative to opioids and synthetic psychoactive substances
- Stimulant at low dose, analgesia/euphoria at higher doses
- Prone to overdose and withdrawal
  - Serotonin syndrome, prolonged QT, extrapyramidal symptoms, prolonged NMB, hemodynamic variability (hypo/hypertension) delayed emergence
- Opportunity to intervene, educate, and refer patients
  - Dangers of common additives (i.e., concentrated formulations, bacterial contaminants, heavy metals)
  - Caution against using it in combination with other substances

Gaarmon EH, Olson K: Anesth Analg 2022; 135: 1180-8

13

Patient Selection

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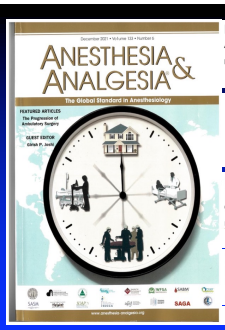

Patient Selection for Adult Ambulatory Surgery: A Narrative Review

Niraja Rajan, MD,* Eric B. Rosero, MD, MSc,† and Girish P Joshi, MBBS, MD, FFARCSI†

Anesth Analg 2021: 133: 415-30

Preoperative Care for Cataract Surgery: The Society for Ambulatory Anesthesia Position Statement

BobbieJean Swetzer, MD, FACP, SAMBA-F, FASA,* Niraja Rajan, MD,† Dawn Schell, MD,‡ Steven Gayer, MD, MBA,§ Stan Eckert, MD,‖ and Girish P Joshi, MBBS, MD, FFARCSI¶

Anesth Analg 2021: 133: 1431-6

Pro-Con Debate: Are Patients With a Cardiovascular Implantable Electronic Device Suitable to Receive Care in a Free-Standing Ambulatory Surgery Center?

Eric B. Rosero, MD, MSc,* Niraja Rajan, MD,† and Girish P Joshi, MBBS, MD, FFARCSI*

Anesth Analg 2022; 134: 919-25

Pro-Con Debate: Are Patients With Coronary Stents Suitable for Free-Standing Ambulatory Surgery Centers?

Eric B. Rosero, MD, MSc,* Niraja Rajan, MD,† and Girish P Joshi, MBBS, MD, FFARCSI*

Rosero EB, Rajan N. Joshi GP: Anesth Analg 2023; 136: 218-26

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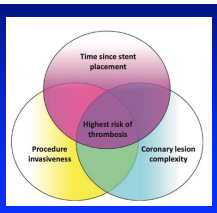
Pro-Con Debate: Are Patients With Coronary Stents Suitable for Free-Standing Ambulatory Surgery Centers? Anesth Analg 2023; 136: 218-26

Eric B. Rosero, MD, MSc,* Niraja Rajan, MD,† and Girish P Joshi, MBBS, MD, FFARCSI*



Risk factors for coronary stent thrombosis

- Invasive open surgical procedure
- Stent placed for acute coronary syndrome
- Type and number of stents
  - First-generation drug-eluting stents
  - Three or more stents implanted
  - Long stents (>60 mm)
  - Bifurcated stents or bifurcation with 2 stents implanted
- Previous stent thrombosis or inadequate antiplatelet therapy
- Patient characteristics
  - Diffuse multivessel disease
  - Left ventricular ejection faction <30%
  - Diabetes mellitus requiring insulin
  - End-stage renal failure requiring dialysis
  - Malignancy

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Coronary Artery Stents Patients at ASC: Pro/Con

- DAPT has been discontinued, patient continues aspirin
  - Time elapsed since stent placement >1 month for BMS and >6 months for newer DES
- Desired procedure can be performed without discontinuation of DAPT
  - Non-invasive or minimally invasive diagnostic/therapeutic procedure
- DAPT cannot be stopped for invasive surgery (high risk of bleeding)
  - Stent-related factors that increase risk of thrombosis
  - Stent implanted for acute coronary syndrome
  - High-complexity coronary artery lesions
- Use of DAPT plus antithrombotic therapy (e.g., oral anticoagulants)
- ASC lacks transfer agreement

Rosero EB, Rajan N, Joshi GP: Anesth Analg 2023; 136: 218-26

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Anesthetic Technique

18

General anesthetic techniques for enhanced recovery after surgery: Current controversies

Joshi GP: Best Prac Res Clin Anaesthesiol 2021; 35: 531-41

- Avoid routine use of midazolam
- Short-acting inhalation anesthesia + N_2O or TIVA
- Avoid deep anesthesia (MAC 0.8–1 and/or EEG monitoring)
- Minimize NMBD, reverse appropriately
- Opioid-sparing NOT opioid-free approach
- Multimodal pain and PONV prophylaxis
- Lung protective ventilation
- Hemodynamic management (fluid and BP management)

19

Preoperative Midazolam: Outcomes

Association of perioperative midazolam use and complications: a population-based analysis

Athanassoglou V, et al. Reg Anesth Pain Med 2022;47:228–33

The Perioperative Use of Benzodiazepines for Major Orthopedic Surgery in the United States

Cozowicz C, et al: Anesth Analg 2022; 134: 486-95

- TJA (n=2,848,847), 75% received midazolam despite concerns
- Midazolam use associated with increased in-hospital falls
- Concurrent use with gabapentin/sedatives increased pulmonary complications, naloxone use, and postoperative delirium
- Midazolam use associated with increased opioid utilization

20

Low Fresh Gas Flow: Inhalational Anesthesia

- Physiological benefits
  - Improves the flow dynamics of the inhaled air
  - Increases muco-ciliary clearance
  - Maintains temperature, as reduces heat loss
  - Reduce fluid loss
- Economical benefits: cost savings
- Ecological benefits: reduced gas emissions
- FGF must equal or exceed gas losses (e.g., O_2 consumption and gas sampling)
- Optimal FGF ~0.5 mL/min

Automated control of end-tidal inhalation anaesthetic concentration using the GE Aisys Carestation™

S. Singaraelu and P. Barclay*

Automated implementation of low-flow anesthesia reduces inhaled anesthetic use and save

21

Low Fresh Gas Flow: Sevoflurane Anesthesia

- Sevoflurane package insert: exposure should not exceed 2 MAC hours at FGF 2 L/min and FGF <1 L/min is not recommended
  - European Union does not have minimal FGF restrictions
- This is based on animal studies reporting renal toxicity from Compound A formed by interaction of sevoflurane with strong bases (NaOH, KOH) used as CO_2 absorbents
- Modern CO_2 absorbents have a small (<2%) amount of strong bases reducing the concern of Compound A formation
- Clinical studies have found that low FGF with sevoflurane is safe
- Canadian guidelines for anesthesia practice recommends FGF <1 L/min for all volatile anesthetics
  - Dobson G, et al: Can J Anesth/J Can Anesth 2023; 70: 16-55

22

Inhaled Anesthetics Collection

An Initial Evaluation of a Novel Anesthetic Scavenging Interface

John A. Barwise, MB, ChB, Leland J. Lancaster, MD, Damon Michaels, BS, Jason E. Pope, MD, and James M. Berry, MD

Anesth Analg 2011; 113: 1064-7

New Method of Destroying Waste Anesthetic Gases Using Gas-Phase Photochemistry

Verena Rauchenwald, MSc,* Mark D. Rollins, MD, PhD,† Susan M. Ryan, MD, PhD,‡ Alex Voronov, PhD,§ John R. Feiner, MD,‡ Karolis Šarka, MSc,* and Matthew S. Johnson, PhD*

Anesth Analg 2020; 131: 288-97

23

2023 American Society of Anesthesiologists Practice Guidelines for Monitoring and Antagonism of Neuromuscular Blockade: A Report by the American Society of Anesthesiologists Task Force on Neuromuscular Blockade

Stephan R. Thilen, M.D., M.S. (co-chair), *Anesthesiology 2023; 138:13–41*

- Minimize NMB
- Quantitative monitoring over qualitative assessment (against clinical assessment alone)
- Use adductor pollicis muscle NOT eye muscles
- For quantitative monitoring, confirm TOF ratio ≥0.9 before tracheal extubation
- Use sugammadex for roc/vec –induced NMB
  - Neostigmine is an alternative to sugammadex at minimal depth of NMB
- For atracurium or cisatracurium and qualitative assessment, neostigmine at minimal NMB depth
  - In the absence of quantitative monitoring, at least 10 min should elapse from antagonism to extubation

24

Association of sugammadex reversal of neuromuscular block and postoperative length of stay in the ambulatory care facility: a multicentre hospital registry study

Azimaraghi O, et al: Br J Anaesth 2023; 130: 296-304

- Retrospective cohort study comparing LOS after ambulatory surgery after sugammadex (n=8945) and neostigmine (n=20,371)
- Sugammadex reduced LOS (by 9.5 min) through reduced PONV (17.2% vs. 19.6%) and reduced cost of care (by $176)
- Benefits higher in older and high-risk patients
- Limitations: Surgery performed in hospital NOT ASCs thus duration of stay not valid, definition of ambulatory surgery questionable, no info on PONV prophylaxis

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Neuromuscular Monitoring: Qualitative Vs. Quantitative

Acceleromyography:

- Thumb must be entirely free to move
  - Precludes monitoring the hand that has been tucked
- Baseline, unparalyzed TOF ratio, should be obtained

Electromyography:

- Hand can be tucked at the patient's side
- Baseline, unparalyzed TOF ratio, is not required
- Electrical signal may be lost along with the OR noise, causing underestimation of twitches (lack of sensitivity)
  - Can lead to unrecognized residual NMB (report 1 Or 2 twitches when there are in fact no twitches) or vice versa

Bowdle A, Michaelsen K. Anesthesiology 2021; 135: 558-61

26

Mechanical Ventilation

27

Lung Protective Ventilation: Avoid Hyperventilation

- Optimal lung protective ventilatory strategy
  - Low TV (6-8 ml/kg, IBW)
  - PEEP (5-10 cm H_2O)
  - Initial respiratory rate 8/min
- Maintain $ETCO_2$ ~ 40 mm Hg
  - Mild hypercapnia improves tissue oxygenation

Lung-protective ventilation for the surgical patient: international expert panel-based consensus recommendations
Young CC, et al: Br J Anaesth 2019

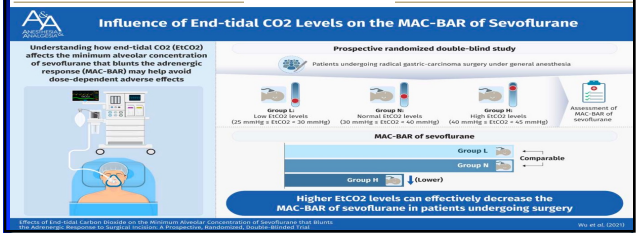
The Role of Carbon Dioxide in Facilitating Emergence from Inhalation Anesthesia: Then & Now
Girish P. Joshi, MB, BS, MD, FFARCSI* **Anesth Analg 2012; 114: 933-4**

28

Effects of $Etco_2$ on the Minimum Alveolar Concentration of Sevoflurane that Blunts the Adrenergic Response to Surgical Incision: A Prospective, Randomized, Double-Blinded Trial

Zhijie Wu, MD,*† Junjie Yu, MD,* Tianhua Zhang, MD,* Hongying Tan, MD, PhD,* Huiting Li, MD,* Lan Xie,* Wenqian Lin, MD,* Danping Shen,* and Longhui Cao, MD, PhD*

Anesth Analg 2022; 135: 62-70



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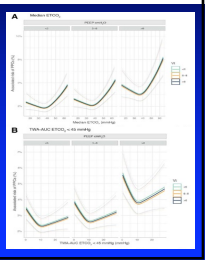
Outlying End-Tidal Carbon Dioxide During General Anesthesia Is Associated With Postoperative Pulmonary Complications: A Multicenter Retrospective Observational Study From US Hospitals Between 2010 and 2017

Akkermans A, et al: Anesth Analg 2022; 135: 341-53

- Retrospective (1/2020-12/2017), observational, multicenter (n=11 hospitals) study in patients (n=143,769) undergoing noncardiac surgery under GA
- Overall incidence of 30-day PPC was 7.1%,
- PPC was associated with increased mortality and LOS
- Compared with median $ETCO_2$ 35-40 mmHg, median $ETCO_2$ of <30 mmHg and 40-45 mmHg was associated with increase in 30-day PPC, mortality, and LOS
- $ETCO_2$ associated with lowest PPC: 35-38 mmHg



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Pain Management

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Multimodal Pain Management

- Acetaminophen and NSAIDs or COX-2 specific inhibitor administered either preoperatively or intraoperatively
  - NSAIDs do not increase bleeding complications
    - Bongiovanni T, et al: Am Coll Surg 2021;232:765-90; Walker NJ, et al: Ann Plast Surg 2019;82:S437-45
- Dexamethasone 8-10 mg, IV
  - Reduces rebound pain [Barry GS, et al: Br J Anaesth 2021;126: 862-71]
  - Prolongs nerve blocks
  - Does not influence postoperative infection or glycemic control
    - Corcoran TB, et al: N Eng J Med 2021; 384; 18; Asehnoune K, et al: BMJ 2021;373:n1162
- Procedure-specific local/regional analgesia
- Opioids as rescue
- Non-pharmacologic interventions

32

Systemic glucocorticoids as an adjunct to treatment of postoperative pain after total hip and knee arthroplasty

A systematic review with meta-analysis and trial sequential analysis

Koppen KS, et al: Eur J Anaesthesiol 2023; 40: 155-70

- RCTs investigating peri-operative systemic glucocorticoid vs. placebo or no intervention for pain management after elective THA or TKA
- Included 32 RCTs with 3521 patients, 9 RCTs had low risk of bias
- Steroids reduced 24-h cumulative morphine requirements by 5 mg
- Mean pain at rest reduced at 6 h by 7.8 mm, at 24 h by 6.3 mm
- Pain with mobilization reduced at 6 h by 9.8 mm, at 24 h by 9 mm
- GRADE rated quality of evidence was low to very low

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High Dose Steroids and Pain After TKA

- High pain responder patients (catastrophizing score >20 or routine opioid use >30 mg OME), undergoing TKA randomized
  - Dexamethasone: 1 mg/kg (high dose) or 0.3 mg/kg (Intermediate dose)
- All patients received SA, pain management: acetaminophen, COX-2 inhibitor, LIA, and opioids for rescue
- High dose steroids reduced moderate-to-severe pain (VAS>30/100) during 5 m walk after 24 h (primary outcome): 49% vs 79%
- Pain on leg raise and QoR-15 scores were also improved with high dose dexamethasone

Nielsen NI, et al: Br J Anaesth 2022; 128: 150-8

34

High-dose dexamethasone in low pain responders undergoing total knee arthroplasty: a randomised double-blind trial

Nielsen NI, et al: Br J Anaesth 2023; 130: 322-30

- Low pain responder patients that typically have less pain and analgesic requirements after surgery randomized
  - Dexamethasone: 1 mg/kg (high dose) or 0.3 mg/kg (Intermediate dose)
- All patients received SA, pain management: acetaminophen, COX-2 inhibitor, LIA, and opioids for rescue
- Pain scores, use of rescue opioids and antiemetics, QoR-15 scores, and opioid-related symptom distress scores in the two groups were similar

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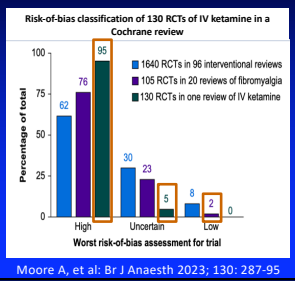
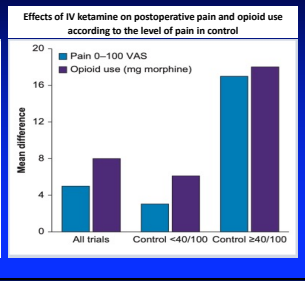
Ketamine: Analgesic Effects





Moore A, et al: Br J Anaesth 2023; 130: 287-95

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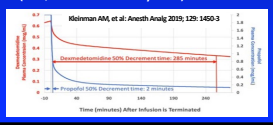
Dexmedetomidine: Not as Safe as You Think

- Promoted as having no resp effects
  - Can cause upper airway collapse/airway obstruction, similar as propofol
- Significant bradycardia and hypotension
  - Prolonged hemodynamics monitoring (i.e., PACU and beyond)



Upper Airway Collapsibility during Dexmedetomidine and Propofol Sedation in Healthy Volunteers
A Nonblinded Randomized Crossover Study
Lodenius A, et al, Anesthesiology 2019; 131: 962-73

Discharge Readiness after Propofol with or without Dexmedetomidine for Colonoscopy
A Randomized Controlled Trial
Edokpolo LU, et al: Anesthesiology 2019; 131: 279-86

Perioperative adverse events attributed to α2-adrenoceptor agonists in patients not at risk of cardiovascular events: systematic review and meta-analysis Demiri M, et al: Br J Anaesth 2019;123:795-807

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Postoperative Considerations

38

Reasons and Risk Factors for Failed Same-Day Discharge After Primary Total Knee Arthroplasty

Shen TS, et al: J Arthroplasty 2023; 38: 668-72

- Retrospective study of TKA patients with planned same day discharge (SDD) from 2017-2020
- Inclusion criteria: unilateral TKA, age 18-70 years, BMI <35, appropriate social and material support at home, absence of CAD, valvular heart disease, opioid dependence
- Of 274 patients, 48.9% required minimum 1-night admission
- Failed SDD: failure to ambulate (25%), late-day case (19%)
- Risks: GA, procedure start after 11am, VAS>8
- Age, ASA-PS did not influence SDD

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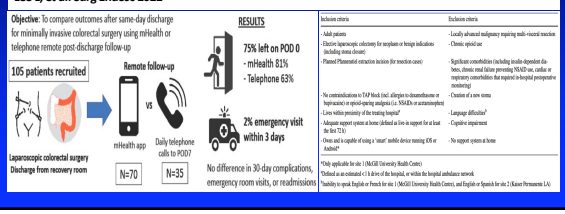
Ambulatory Colorectal Surgery

North American Multicentre Evaluation of a Same-Day Discharge Protocol for Minimally Invasive Colorectal Surgery using mHealth or Telephone Remote Post-Discharge Monitoring

Lee L, et al: Surg Endosc 2022



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Patient Safety

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Causes of Patient Harm

- Inadequate preoperative assessment and optimization of comorbid conditions
- Inadequate patient monitoring
- Lack of communication among providers

https://www.thedoctors.com/the-doctors-advocate/fourth-quarter-2019/making-further-advancements-in-anesthesia-care-safety/.

42

Communication failures contributing to patient injury in anaesthesia malpractice claims☆

Douglas RN, et al: Br J Anaesth 2021; 127: 470-8

- Study assessed role of communication failures in patient injury using the Anesthesia Closed Claims Project database
- Claims associated with surgical/procedural and obstetric anesthesia and pain management for adverse events from 2004
- Communication: transfer of information between 2 or more parties
- Failure: incomplete, inaccurate, absent, or untimely communication
- Communication failure contributed to patient injury in 43% claims
- Most common root cause of communication failure was insufficient or inaccurate information
- Failures were more common in outpatient settings

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Association Between Familiarity of the Surgeon-Anesthesiologist Dyad and Postoperative Patient Outcomes for Complex Gastrointestinal Cancer Surgery

Hallet J, et al: JAMA Surg. doi:10.1001/jamasurg.2022.8228

- Higher surgeon volume is associated with decreased morbidity and mortality and improved long-term outcomes
- Higher anesthesiology volume for complex cases is also associated with reduced major morbidity [Hallet J, et al: JAMA Surg 2021; 156: 479-87]
- Population-based study (n=7893), surgeon-anesthesiologist dyad was associated with 5% reduction in odds of 90-day major morbidity
- Surgeon-anesthesiologist relationship and teamwork improve patient outcomes

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A bibliometric analysis of obstructive sleep apnea and anesthesia

Özlem Öner, MD, PhD[a,*], Mustafa Cenk Ecevit, MD[b], Ali Necati Gökmen, MD, PhD[c]

Abstract

To conduct a bibliographic analysis of obstructive sleep apnea (OSA) which has reached epidemic proportions and is a frequent, unknown, and important cause of perioperative morbidity and mortality, by examining the internationally most cited articles. For OSA, the most cited articles in the field of anesthesiology and reanimation, appropriate access terms were compiled and combined, and related publications were searched using the Thompson Reuters Web of Science Citation Indexing search engine. A total of 79 journal publications were found on OSA and anesthesia, with an average of 14.86 citations per article. The most cited publication was the "Society for Ambulatory Anesthesia Consensus Statement on Preoperative Selection of Adult Patients with Obstructive Sleep Apnea Scheduled for Ambulatory Surgery" published in the journal *Anesthesia and Analgesia* and was conducted by Joshi et al. It was found that 38 of the 79 studies reached as a result of the search were articles, and the average number of citations was 21.13. The Hirsch index of these articles, which were cited 803 times in total, was 15. A total of 31 articles (81.57%) were cited at least once, while the remaining 7 articles (18.43%) were not cited at all. The majority of the articles obtained are from the research fields of anesthesiology (n = 20; 52.63%), followed by otorhinolaryngology (n = 5; 13.15%), pediatrics (n = 5; 13.15%), respiratory system (n = 5; 13.15%), internal medicine (n = 4; 10.52%), and the rest were in various fields. Publications on "Obstructive Sleep Apnea" and "Anesthesia" have increased rapidly in the last decade. Anesthesia management and airway safety, patient management, including pain control in the postoperative period, and noninvasive mechanical ventilation treatment methods, such as continuous positive airway pressure, are hot topics.

Abbreviations: AHI = apnea-hypopnea index, CPAP = continuous positive airway pressure, H-index = Hirsch index, IF = impact factor, OSA = obstructive sleep apnea, OSAS = OSA syndrome, SCI = WOS Citation Indexing, UA = upper airway, WOS = Web

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Summary

- Growth in ambulatory surgery provides opportunity for anesthesiologists to play a pivotal role in perioperative care, including post-discharge care
- Develop evidence-based procedure- and patient-specific pathways with multidisciplinary input
- Elements that influence outcomes after ambulatory surgery
  - Preoperative: patient selection, preoperative evaluation and optimization
  - Fast-track anesthetic technique, pain and PONV prophylaxis
  - Post-discharge care: patient education and monitoring for early identification of complications using modern technology

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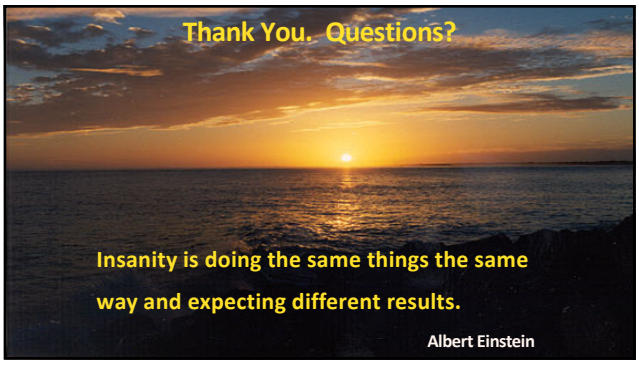

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