

Abstract #1

Ambulatory Anesthesia

AMBULATORY SURGERY ENHANCED RECOVERY AFTER SURGERY - A COMPLETE GUIDE TO OPTIMIZING OUTCOMES

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Aim: Ambulatory surgery centers that implement ERAS protocols can provide cheaper services while maintaining the efficiency of their center and increasing patient outcomes. Main results: Ambulatory surgery centers offer surgical care, intervention, diagnostic, and preventative procedures. These facilities are revolutionary because they provide an alternative to hospital-based outpatient services and generally provide favorable patient outcomes. Enhanced Recovery After Surgery (ERAS) was established in 2001 to improve patient care and increase the number of available ambulatory surgeries. ERAS protocols arose out of the need to decrease physiologic and psychologic surgical stress and enhance postoperative recovery. Overall, ERAS aims to reduce unfavorable sequelae, shorten the length of hospital stay, reduce cost, and improve patient recovery. Surgical subspecialties have embraced the philosophy of ERAS, creating unique protocols to meet their patients' needs.

Conclusion: There are ERAS guidelines available for nearly every specialty in healthcare, and ambulatory surgery is no exception. ERAS guidelines' goal to reduce patient recovery time and improve patient outcomes align with the mission of ambulatory surgery centers. Many ERAS pathways are used in ambulatory surgery and focus on preoperative, intraoperative and postoperative outcomes. Preoperatively, the focus should be on patient counseling regarding what to expect leading up to surgery, including day of surgery, as well as postoperative expectations. Preoperative metabolic optimization is a technique incorporated into many ERAS protocols which includes various techniques aimed at reducing the inflammatory reactions. These techniques include carbohydrate loading, perioperative glycemic control, preoperative enteral feeding, immune modulating nutrition, and addition of trace vitamins and minerals. Clinical application of ERAS protocols in the intraoperative setting include a focus on multimodal analgesia, fluid and salt balance, maintenance of normothermia, and avoidance of opioids if possible. These techniques have been shown to decrease patient complications when applied to the intraoperative setting.

Abstract #2

Cardiac Anesthesia

PREVENTING BLOOD TRANSFUSION ERRORS IN THE OPERATING ROOM

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Blood transfusion errors caused by patient misidentification can be catastrophic. In 2016, a blood transfusion error that occurred in the OR setting. The anesthesia team, informaticists and OR leaders coordinated a plan to use technology to prevent future occurrences.

In 2016, barcode scanning technology was in use for patient identification and blood product accuracy throughout the hospital, but it was not being utilized in the OR setting. The informatics team found two significant barriers to using barcode scanning technology in the OR setting: (1) a patient's identification armband could not be accessed when the sterile, surgical drapes covered the patient's arm, and (2) patient identification armbands were removed during some surgical procedures, based on clinical assessment and needs of the patient (eg, edema of the arm).

Lean project to assess the current and future state of blood administration in the OR setting and to maximize the use of existing resources to enhance patient safety in the OR. As part of the project, a workgroup comprised of nurses, certified registered nurse anesthetists, patient registration representatives, organizational leaders, a regulatory readiness leader, and nursing informaticists completed an analysis of blood transfusion processes in the OR. After completing a Failure Mode and Effects Analysis (FMEA) to identify potential barriers to implementing barcode scanning in the OR, a two-step solution was developed. Adding a second identification band to scan and a patient verification checklist to ensure blood bands are correct. Since the process was put into practice the organization has had zero transfusion errors and a greater than 94% barcode scanning compliance rate.

Abstract #3

Fundamentals of Anesthesiology

ANESTHETIC CARE FOR COEXISTING MYASTHENIA GRAVIS AND LIMB GIRDLE MUSCULAR DYSTROPHY

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Myasthenia Gravis (MG) is an autoimmune disorder whereby IgG autoantibodies directed toward nicotinic acetylcholine receptors (AChRs) cause functional and quantitative reductions of the AChRs at the postsynaptic muscle membrane, at a prevalence of 36,000 to 60,000 cases per year. Limb Girdle Muscular Dystrophy (LGMD) is a hereditary neuromuscular disorder characterized by muscle fiber necrosis with fibrotic regeneration with prevalence estimated at 1 in 14,500 to 1 in 123,000. The coexistence of these disorders is undocumented. These rare disorders require a concrete understanding of each independent pathophysiology, their interplay, and anesthetic implications. Here, we offer a case of a 67 yo female presenting for repeat thyroidectomy with history of papillary thyroid cancer, HTN, GERD, OSA with CPAP use, Myasthenia Gravis, Limb Girdle Muscular Dystrophy, limited exercise tolerance due to shortness of breath, secondary to muscular dystrophy, and right phrenic nerve palsy. Physical exam revealed normal bilateral lung sounds, left > right, regular rhythm and rate, 5/5 strength in the cranial nerves and 3/5 strength in all four extremities. Preoperative vitals were within normal limits except for a 95% saturation on room air. Induction was achieved with Propofol, Lidocaine, Etomidate, Fentanyl and 5mg of Rocuronium. 1 of 4 twitches were present after induction. She was intubated and maintained with Sevoflurane and +5 PEEP. TOF revealed 2 full twitches and fade at the end of the case, 2.5 hours later. Reversal agents were administered resulting in full twitches prior to extubation. She emerged with intact respiratory effort. Extubation proceeded uneventfully and her neurologic exam returned to baseline in the PACU. This case required a judicious use of muscle relaxants and reversal agents, with meticulous tracking of twitches. This case demonstrates the fundamental importance of understanding comorbidities and tailoring the anesthetic plan appropriately.

Abstract #4

Fundamentals of Anesthesiology

Troubleshooting PA and CV Catheter Placement

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69 yo F with h/o HTN and bradycardia who presented with complaints of nausea, dizziness, diaphoresis, transient vision loss to left eye and vertigo. In ER stroke and ACS workup initiated. Stroke workup negative. Pt found to have elevated troponins but no ST elevations. Patient received LHC showing significant stenosis of LAD, CX, and CTO of, and acute thrombotic occlusion of RCA and underwent POBA. Subsequently the patient was scheduled for a CABG. During the placement of a right internal jugular central line, the guidewire met resistance. The needle and guidewire was removed and ultrasound revealed what appeared to be intimal tear in proximal right IJ. It was decided to move to the right subclavian for access and the central line was placed without complication. PAC attempted to be floated multiple times with no success. The Central line withdrawn 3-5 cm and then we were able to easily float the PAC. The pt went on to have an uneventful CABG. While PA catheters can be useful tools in the assessment of hemodynamics there can be various risks and difficulties with placement of PA catheters and with central line placement. This case presentation emphasizes the need for proper safety techniques of central line placement and pros and cons of various access sites for floating PA catheters. In addition we will discuss some helpful tips for PA catheter placement.

Abstract #5
Pain Medicine

REGENERATIVE TECHNIQUES FOR NEURAXIAL BACK PAIN: A SYSTEMIC REVIEW

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Purpose of review: Regenerative modalities have been identified in numerous clinical studies as beneficial in various settings. The focus of this review is to summarize key studies and current concepts for the role of regenerative medicine in the treatment of neuraxial back pain.

Recent findings: Recent studies have demonstrated the benefit of regenerative therapies for the treatment of neuraxial back pain. A literature review of clinical trials published between 2015 and 2017 was performed using OVID, PubMed, and Google Scholar to identify investigations attempting to determine the efficacy of various regenerative modalities on two primary sources of low back pain: facet arthropathy and degenerative disc disease. The seven articles analyzed in this systematic review present promising data regarding the use of these autologous biologic treatments, but many of these investigations have several limitations in common including small sample size.

Summary: Regenerative medicine has been shown to demonstrate efficacy in the treatment of neuraxial back pain. As the field advances, new studies are needed comparing efficacy and safety profiles to best determine best practices techniques and standards in the future. Regenerative procedures, such as those outlined in this systematic review, will only increase in popularity, particularly within the context of low back pain. Long-term efficacy is of importance given the unknown long-term effects and unknown duration of efficacy. This research should focus on clinical, rather than statistical, significance to better determine benefit conferred to patients. This promising data represents an opportunity to affect significant change and improve patient quality of life for sufferers of low back pain and affords this population an alternative to the current standard of care that includes corticosteroid injections or surgical intervention.

Abstract #6
Pain Medicine

THE ROLE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE TREATMENTS IN FIBROMYALGIA: A COMPREHENSIVE REVIEW

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Purpose of Review: Fibromyalgia is a complex chronic pain syndrome that can have debilitating consequences for affected patients. When compared to the general population, patients with fibromyalgia experience lowered mechanical and thermal pain thresholds, altered temporal summation of painful stimuli, and higher than normal pain ratings for known noxious stimuli.

Recent Findings: There is no definitive cure for fibromyalgia and treatment primarily focuses on both symptom management and improving patient quality of life. This treatment strategy involves a comprehensive multi-disciplinary approach consisting of lifestyle modifications, pharmacologic measures, and other complementary approaches including but not limited to acupuncture, yoga, tai chi, and meditation.

Summary: This abstract discusses new treatments for fibromyalgia including complementary and alternative therapies that should be considered by healthcare providers. While many of these aforementioned complementary approaches such as lifestyle modifications, pharmacologic measures, acupuncture, yoga, and meditation have shown promise in smaller studies, it is imperative to note that larger trials need to be performed to further support the current available evidence prior to widespread implementation. However, because these modalities are relatively low risk, clinicians should consider these potential adjuncts in patients with refractory symptoms. Given the current opioid epidemic, the role of complementary methods for pain and symptom control in fibromyalgia patients is even more important than ever and warrants additional study to better define its therapeutic role. There are several emerging treatment modalities that have the potential to show promise for patients in the future. Several small studies have shown that hyperbaric oxygen therapy may be effective in mitigating symptom intensity. Fibromyalgia remains a complex syndrome that is best managed with a comprehensive and multi-disciplinary approach. In summary, more research into non-pharmacologic approaches to symptom management need to be done to help mitigate the use of opioids in fibromyalgia and further improve patient quality of life.

Abstract #7

Pediatric Anesthesia

ANESTHETIC MANAGEMENT OF INFANT WITH REPAIRED ATRIOVENTRICULAR CANAL DEFECT AND PACEMAKER

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Down syndrome, also known as trisomy 21, is a genetic disorder characterized by the presence of a partial piece or complete third copy of chromosome 21. This syndrome is associated with congenital heart defects, growth delays, intellectual disabilities, and unique facial features. Patients with Down syndrome provide a unique set of complications for the anesthesiologist. They may present with airway abnormalities, lax cervical ligaments, and congenital heart defects. About 50% of these patients have congenital heart disease, half of which are cushion defects. They may also present with atrial septal defects, ventricular septal defects, tetralogy, and patent ductus arteriosus. This case report presents the anesthetic management of an infant with a history of Down syndrome, PDA ligation with PA band placement, repaired atrioventricular canal defect, and pacemaker presenting for repair of enterocutaneous fistula. During this case report, we will review the unique aspects of providing anesthesia for patients with Down syndrome with repaired atrioventricular defect and pacemaker, the challenges that this particular patient presented, and our anesthetic management of this patient.