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The improved accuracy of noninvasive scanning devices has led to a decrease in unexpected findings. Nevertheless, the surgeon still may encounter unsuspected diseases during abdominal exploration. A logical approach to these problems is outlined in this article.

Anesthetic Problems: Venous Air Embolism, Airway Difficulties, and Massive Transfusion	213
Alan P. Marco and William R. Furman	

Perioperative anesthetic complications of interest to the general surgeon are reviewed. The pathophysiology, diagnosis, and treatment of venous air embolism are discussed. Problems in airway management, including the unexpected difficult intubation and aspiration of gastric contents, are presented. Lastly, complications of massive transfusions are addressed.

Intraoperative Fluid Management	229
Lloyd E. Ratner and Gardner W. Smith	

Despite a plethora of clinical and experimental studies comparing various fluid regimens, no clear consensus has emerged on what constitutes the best treatment. The relative advantages and disadvantages of crystalloids, colloids, and hypertonic solutions

are discussed. Included is a discussion of potential morbidity associated with intraoperative resuscitation.

Management of the Difficult Abdominal Closure

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Jonathan M. Saxe, Anna M. Ledgerwood, and
Charles E. Lucas

Primary closure of the abdominal wound following laparotomy in patients with hemorrhagic shock, massive transfusions, swollen abdominal viscera, and loss of compliance of the abdominal wall cannot be achieved without excessive tension. Persistence at primary closure in such patients leads to respiratory compromise, oliguria, enterocutaneous fistula, impaired abdominal wall nutrient blood flow, necrotizing fasciitis, evisceration, and sometimes death of the patient. A method of closure using an abdominal wall pack consisting of fluff gauze and rayon cloth is described. This method allows for fascia approximation and secondary wound healing without hernia in about 7 to 10 days as the patient enters the diuretic phase of resuscitation.

Use of the Pulmonary Artery Catheter to Reduce Operative Complications

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Juan E. Sola and Jeffrey S. Bender

Despite several prospective, randomized trials that demonstrated reductions in operative morbidity and mortality rates, routine use of invasive monitoring has not achieved widespread acceptance. This probably comes from skepticism about the validity of some of the studies along with known complications of the pulmonary artery catheter. The major studies are reviewed and a rational approach to monitoring is presented.

Complications of Laparoscopic Surgery

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David W. Crist and Thomas R. Gadacz

The potential complications of a laparoscopic procedure include those related to laparoscopy and those related to the specific operative procedure. The majority of these complications occur during the early learning phase for laparoscopy. They also may occur, however, during procedures performed by surgeons who have considerable laparoscopic experience. As new applications for laparoscopy continue to emerge, it is important for the surgeon to be familiar with the possible complications associated with the various laparoscopic procedures. Only through an appreciation of the potential complications of a procedure can their overall incidence be reduced to a minimum.

Empiric Antibiotic Therapy of Abdominal Sepsis and Serious Perioperative Infections

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Joseph W. Shands, Jr

This article discusses empiric therapy for several serious infections in surgical patients. The accepted antibiotic treatment for

purulent peritonitis, the empiric treatment of postsurgical wound infection, and the empiric treatment of postsurgical pneumonia are discussed. The cost of the various regimens is listed. Recommendation of the various regimens is based on the seriousness of the infection, peculiarities of the hospital flora, effectiveness of the regimens, and cost.

Complications of Surgery of the Thyroid and Parathyroid Glands

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Michael P. Kahky and Randal S. Weber

Thyroid and parathyroid surgery should be performed with low morbidity. Potential complications include postoperative hemorrhage and airway obstruction, changes in voice quality from injury to the recurrent or superior laryngeal nerves, postoperative hypocalcemia from inadvertent parathyroid gland injury, thyroid storm following surgery for hyperthyroidism, and persistent hypercalcemia after cervical exploration for primary hyperparathyroidism. These complications are discussed along with suggestions for reducing their occurrence.

Complications of Vascular Surgery

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G. Melville Williams

Hemorrhage, early thrombosis of a graft or vessel nerve injury, graft infection, and renal failure are frustrating problems for vascular surgeons. All frequently arise from technical complications. Methods of avoiding these problems are discussed.

Major Hepatic Trauma

337

M. Gage Ochsner, Jonathan H. Jaffin, Mario Golocovsky, and Ralph C. Jones

The intraoperative management of complex liver injuries can be extremely challenging. During the past two decades, there have been some changes in philosophy regarding the optimal techniques for controlling hemorrhage and decreasing mortality and morbidity rates. An overview of these techniques is presented.

Differential Diagnosis and Management of Unexplained Bleeding

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Donald W. Weaver

A brief overview of normal hemostasis is reviewed. Congenital and acquired causes of bleeding are discussed. Methods for evaluation of the coagulation system of the patient prior to an operative procedure are outlined. A strategy for characterizing intraoperative bleeding disorders and appropriate interventions are discussed.

New Techniques in Burn Wound Management 363
Lesley Wong and Andrew M. Munster

The critical care management of the burn patient has advanced such that those patients with larger burned surface areas are surviving for longer periods. Wound management and closure thus become critical to the patient's ultimate outcome. New techniques for modifying the extent of the burn injury and for replacing the skin cover are described in this article.

Surgical Issues in the Management of the HIV-Infected Patient 373
Bradley S. Bender and Jeffrey S. Bender

Surgeons are called upon with increasing frequency to participate in the management of HIV-infected patients. This review summarizes the epidemiology, natural history, infection control procedures, and surgical indications relating to HIV infection.

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