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**CURRENT THERAPY IN  
SURGICAL GYNECOLOGY**

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**GARCIA / MIKUTA / ROSENBLUM**

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**NOT FOR RESALE**

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# CURRENT THERAPY IN SURGICAL GYNECOLOGY

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# PREFACE

Clinical practices in surgical gynecology vary with changing attitudes. With the improved technology and a better understanding of the physiology of the reproductive system, the diagnosis and management of the sundry diseases have also changed. This is also true of the oncologic aspects of surgical gynecology. Often multi-disciplinary approaches are reflected in these therapies, albeit with a surgical predominance.

This volume provides practitioners with an up-to-date concise appraisal of what works best in the hands of their colleagues and mentors. The chapters are written by respected gynecologic surgeons and are based largely on their experiences in daily practice. It should also prove useful to residents. Although surgical gynecologic textbooks do exist, they are not revised often enough to keep pace with the rapid progress in this field. *Current Therapy in Surgical Gynecology* is a collection of concise chapters on the state of the art, written by authors from many different institutions. This volume represents the first of a series; we intend that the varying viewpoints of other qualified contributors will be represented in subsequent editions.

The editors are grateful to those who have contributed to this volume and for their patient understanding. We wish likewise to express our gratitude to Mrs. Kathy Kelly, secretary to Dr. Garcia, and to Mrs. Toni Roulston, secretary to Dr. Mikuta, for their exceedingly valuable typing service, for their magnificently efficient and orderly administrative skills, and particularly for their understanding. Our gratitude also goes to Ms. Mary Mansor, who has been our reliable, supportive editorial interface with our publisher, Mr. Brian Decker. To Brian we express our thanks for his continuing display of talent, enthusiasm, and encouragement, but above all his endless tolerance and patience. Finally, the editors are grateful to each other, for their support of each other, for their own contributions, and above all for the continuing equanimity that has allowed us all to remain good friends.

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# CONTENTS

## OPERATIVE CONSIDERATIONS

Preoperative Care of the Surgical Patient . . . . .	1	Septic Shock . . . . .	41
<i>John J. Mikuta</i>		<i>Denis Cavanagh</i>	
		<i>S. C. Peter Bryson</i>	
Preoperative Medical Concerns . . . . .	4	Myomata Uteri: Myomectomy versus Hysterectomy . . . . .	46
<i>Tawfik H. Rizkallah</i>		<i>Veasy C. Buttram Jr.</i>	
Postoperative Care of the Surgical Patient . . . . .	10	Endoscopy in Myomata Uteri . . . . .	50
<i>Earl A. Surwit</i>		<i>Alan H. DeCherney</i>	
Hyperalimantation . . . . .	14	Myomata Uteri: Medical versus Surgical Management . . . . .	53
<i>Stanley J. Dudrick</i>		<i>Richard W. Tureck</i>	
<i>Denis P. Raleigh</i>		The Ovaries in Surgery of Benign Gynecologic Disease . . . . .	55
Informed Consent and the Surgical Patient . . . . .	21	<i>John M. Riva</i>	
<i>Daniel Goldberg</i>		Total versus Subtotal Abdominal Hysterectomy . . . . .	58
Surgery of the Anterior Abdominal Wall . . . . .	24	<i>Pentti P. Kilkku</i>	
<i>Steven Pursell</i>		Endometriosis and Adenomyosis . . . . .	62
<i>Norman G. Rosenblum</i>		<i>James D. Kitchin III</i>	
Cytology of the Female Reproductive Tract . . . . .	28	Pelvic Pain . . . . .	67
<i>Barbara Atkinson</i>		<i>Melvyn A. Bayly</i>	
<i>Carolyn S. Ernst</i>		Presacral Neurectomy . . . . .	70
		<i>L. Russell Malinak</i>	
		<i>James M. Wheeler</i>	
<b>SURGERY OF NON-NEOPLASTIC DISEASE</b>		Diagnostic Laparoscopy . . . . .	72
Dilatation and Curettage . . . . .	35	<i>Richard K. Kleppinger</i>	
<i>H. Michael Seitz Jr.</i>		Laparoscopy in Tubal Sterilization . . . . .	80
Pelvic Inflammatory Disease . . . . .	38	<i>Richard K. Kleppinger</i>	
<i>Richard H. Schwarz</i>			

Laparoscopy in Intra-abdominal Surgery . . . . .	87	Vaginal Approach to Posthysterectomy Vaginal Vault Prolapse . . . . .	138
<i>Celso-Ramón García</i>		<i>David H. Nichols</i>	
Technique of Abdominal Hysterectomy . . . . .	91	Abdominal Approach to Posthysterectomy Vaginal Vault Prolapse . . . . .	142
<i>A. Cullen Richardson</i>		<i>Stanley J. Birnbaum</i>	
Tubal Surgery for Sterilization . . . . .	96	Clinical Urodynamic Evaluation . . . . .	145
<i>George R. Huggins</i>		<i>J. Andrew Fantl</i>	
Tubal Surgery for Infertility . . . . .	99	Urinary Incontinence . . . . .	149
<i>Luigi Mastroianni Jr.</i>		<i>Raymond A. Lee</i>	
<i>Celso-Ramón García</i>		Early Vulvar Disease . . . . .	153
In Vitro Fertilization . . . . .	102	<i>Robert L. Giuntoli</i>	
<i>Luis Blasco</i>		Early Cervical Disease . . . . .	155
<i>Richard W. Tureck</i>		<i>Robert L. Giuntoli</i>	
Ectopic Pregnancy . . . . .	107	Enlarged Bartholin's Gland . . . . .	158
<i>Alan H. DeCherney</i>		<i>Robert S. Weinstein</i>	
<i>Gabriel Oelsner</i>		Intestinal Vaginal Fistula . . . . .	162
Congenital Uterine Anomalies . . . . .	111	<i>John C. Weed</i>	
<i>John A. Rock</i>		<i>William L. Geary</i>	
Congenital and Acquired Vaginal Anomalies . . . . .	115	Urologic Complications of Surgery . . . . .	166
<i>Martin Farber</i>		<i>Steven H. Pursell</i>	
<i>Joel S. Noumoff</i>		<i>John J. Mikuta</i>	
Ovarian Surgery . . . . .	118	Surgical Intestinal Problems . . . . .	168
<i>Celso-Ramón García</i>		<i>Daniel Paloyan</i>	
Appendectomy in Gynecologic Surgery . . . . .	121	Surgical Hemorrhage and Infection . . . . .	173
<i>Charles E. Mangan</i>		<i>James L. Breen</i>	
The Incompetent Cervix . . . . .	124	<i>John Kindzierski</i>	
<i>Christos Coutifaris</i>		<i>Caterina A. Gregori</i>	
<i>Michael T. Mennuti</i>		Lasers in Fertility Surgery . . . . .	181
Abortion . . . . .	128	<i>George M. Grunert</i>	
<i>Steven J. Sondheimer</i>		<b>SURGERY OF NEOPLASTIC DISEASES</b>	
Suburethral Diverticulum . . . . .	130	Vulvectomy . . . . .	185
<i>David S. Ginsburg</i>		<i>Mark A. Rettenmaier</i>	
Cystocele, Rectocele, Enterocoele, and Uterine Prolapse . . . . .	132	<i>Philip J. DiSaia</i>	
<i>John H. Isaacs</i>			

Cervical Intraepithelial Neoplasia . . . . .	190	Tubal Carcinoma . . . . .	212
<i>Thomas V. Sedlacek</i>		<i>Norman G. Rosenblum</i>	
Radical Hysterectomy for Cervical Carcinoma . . . . .	192	Gestational Trophoblastic Disease . . . . .	216
<i>Manuel A. Penalver</i>		<i>W. Michael Hogan</i>	
<i>Hervy E. Averette</i>			
<i>Robert E. Girtanner</i>			
<i>Bernd-Uwe Sevin</i>			
<i>Moises Lichtinger</i>			
Endometrial Carcinoma . . . . .	200	Vaginal Carcinoma . . . . .	220
<i>William T. Creasman</i>		<i>John A. Carlson Jr.</i>	
<i>John T. Soper</i>			
Uterine Sarcoma . . . . .	204	Vascular Complications of Surgery . . . . .	223
<i>Guy Benrubi</i>		<i>Robert E. Girtanner</i>	
Ovarian Carcinoma . . . . .	208	Pulmonary Complications of Surgery . . . . .	227
<i>Leo D. Lagasse</i>		<i>James G. Buss</i>	
		<i>Tiffany J. Williams</i>	

# OPERATIVE CONSIDERATIONS

## PREOPERATIVE CARE OF THE SURGICAL PATIENT

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Most gynecologic surgical procedures are elective or semi-elective. The gynecologist, therefore, has an opportunity to evaluate the patient during an office visit and examination. This allows a thorough assessment of the patient's chief complaint, systemic review, and physical examination. Symptoms that appear to be gynecologic may actually be arising from dysfunctional or pathologic processes in adjacent organs, most frequently in the bowel or urinary tracts. A gynecologic history must be taken in detail, seeking information regarding the menstrual history, such as menarche, frequency, duration, amount, type and degree of any pain, and degree of disability. The obstetrical history should include number of pregnancies, live births, stillbirths, abortions, (spontaneous and induced), complications of pregnancy, labor, and delivery. A history of previous gynecologic procedures is important because the difficulty and complications as well as the results of any contemplated procedures could be related to the previous surgery. It is also important that a psychosocial and sexual history be taken to evaluate the possible relationship of the symptomatology to emotional, social, and other environmental factors.

The patient should undergo a measurement of weight, height, blood pressure, and hematocrit or hemoglobin. The urine should be checked for glucose and protein. When indicated, a microscopic urinalysis should be carried out on a clean-catch urine specimen; also, when indicated, a urine culture and antibacterial sensitivity should be done. A general physical examination should be performed to include examination of the head, the heart and lungs, the breasts, the abdomen and its contents, the extremities, the neurologic status, and finally the pelvic region. Pelvic examination is begun by a careful examination of the vulva, urethra, Skene's ducts, Bartholin's glands, and the anal orifice. A speculum is then placed into the vagina, and cytologic smears are taken from the endocervix as well as the exocervix. The vagina is carefully inspected prior to complete removal of the speculum. In women over 40 years of age, particularly symptomatic postmenopausal patients, endometrial aspiration cytology

and/or biopsy of the endometrium is desirable to improve the accuracy of preoperative diagnosis prior to hospital admission. It is important that the location of the uterine fundus be ascertained prior to any invasive manipulation of the uterus for diagnostic purposes. During the vagino-abdominal examination (bimanual examination), the size, shape, and position of the uterus as well as the size, shape, and consistency of adnexal structures is determined. After cleansing or changing the glove, a rectovaginal examination with the index finger in the vagina and the middle finger in the anus is carried out, to confirm the findings of the vaginal examination, to rule out intrinsic bowel lesions, and to obtain, if possible, a sample of stool for occult blood.

Following the evaluation described, if the gynecologist is able at that point to render an opinion concerning the necessity for a surgical procedure, precise information should then be presented to the patient, preferably in the presence of her husband or a companion. Symptoms and physical findings should be reviewed in lay terms, and the provisional diagnosis and proposed treatment outlined. A patient who has known her gynecologist for some time is generally more likely to accept his or her diagnosis and recommended treatment. It is advisable, however, to always offer the patient other reasonable alternatives, describing the risks and benefits if such are available. A very important feature of this presentation is to provide the patient with the opportunity to consult with another gynecologist for a "second opinion". When the patient has had an opportunity to evaluate and accept the diagnosis and therapeutic options, the informed consent should be obtained from her. Ideally, this should be done in the presence of a witness and by the physician who is contemplating the operative procedure. Once again, the consent should be presented in such a way that both the benefits of the proposed procedure and the risks from the surgical procedure are clearly understood. No result should ever be "guaranteed." Expressions, such as, "You'll be just fine," should never be used. Any conditions that have a strong potential for producing bad results should be explained and presented clearly and honestly. Standard mortality and morbidity rates associated with specific operations should also be presented. Audiovisual aids, as well as procedures, are helpful in presenting details of various operative procedures as well as the possible complications and side effects. A note on the record, signed by the patient, verifying that she has viewed such material, has had it discussed by her gynecologist, and understands

the procedure as well as its risks and benefits, can provide the basis for adequate informed consent.

The location of the actual surgical procedure has undergone significant revision over the past few years. Minor procedures, such as dilatation and curettage, abortion, vulvar or vaginal biopsies, and Bartholin's cyst marsupialization, can be done in a Short Procedures Unit, A Day Surgery Unit, or in a "Surgi-Center." Patients who require such procedures generally do not require extensive preoperative evaluation even if a general anesthetic is going to be given. This would exclude patients with a history of heart disease, hypertension, asthma, diabetes, anemia, blood dyscrasias, and other systemic diseases. Generally, a blood count, chest film, and electrocardiogram constitute an adequate preoperative work-up unless the patient's age and medical status dictate otherwise. The patient is evaluated in the office so that her history and physical examination are available on the day of the procedure, and she is re-evaluated by the anesthesiologist at the time of the procedure. On completion of the procedure, she is kept in a recovery room until she is fully reacted and capable of being transported home by a friend or relative. If a problem should arise related to bleeding, anesthesia, uterine perforation, or other conditions that require prolonged observation of the patient, admission to the hospital may be necessary.

When major surgical procedures are contemplated, more extensive evaluation is carried out. In addition to the routine evaluation already described, serum electrolytes, blood urea nitrogen, and creatinine levels are determined, and liver function studies are performed. Intravenous pyelography is not always indicated, but should be considered when there is a history of recurrent urinary tract infection, urinary incontinence, or hypertension. If the pelvic examination suggests "involvement" of the urinary tract, particularly the ureters, in such conditions as intraligamentary myoma, cervical myoma, pelvic infections, or endometriosis, evaluation of the urinary tract is important. In patients with urinary incontinence, urinary urgency with or without incontinence, frequency, nocturia, difficulty in starting the urinary stream, or incomplete bladder evacuation, cystoscopy, cystometry, and either chain cystourethrography or voiding cystourethrography should be carried out to rule out problems other than the obvious anatomic abnormalities. The most common problems are chronic or recurrent bladder infections, calculi, detrusor dyssynergia, and neurologic problems. Suburethral diverticula should always be considered as well.

In addition to urinary tract evaluation, intestinal symptoms such as constipation, bleeding, and recent changes in bowel habits should be evaluated further by barium enema and proctosigmoidoscopy prior to the gynecologic procedure. There is a high incidence of diverticulosis in women over the age of 50, and it should be noted prior to surgery whether lesions, particularly in the left pelvic area, are related to the intestine.

Further preoperative evaluation may require special studies to discover the possibility of fistulous tracts between gynecologic structures and other adjacent organs.

Previous surgical procedures in the pelvis as well as radiation therapy are most commonly associated with such lesions. Although careful inspection of the pelvic structures may identify such areas, a vaginogram or fistulogram may show the relationship of the involved organs.

If specific lesions need to be further identified, a simple flat film of the pelvis may show calcification characteristic of the cystic teratoma (dermoid). Ultrasonography is helpful in defining pelvic masses. Computerized tomography (CT scan) is helpful in outlining the presence of lesions, tumor invasion into surrounding structures, and lymph node enlargements. In the future, magnetic resonance imaging (MRI) promises to be of even greater benefit. A major advantage is the reduction of exposure to ionizing radiation.

All of the procedures just described can be performed on an outpatient basis. Although this is advisable from an economic standpoint and may be mandated by insurance carriers, the patient's age, infirmity, geographic location, and emotional status must be considered in making these decisions.

The patient should be advised to contact the gynecologist if problems arise that may contraindicate either the anesthesia or the operation, such as upper respiratory infection, urinary tract infection, or any significant changes in the presenting symptom.

The gynecologist should consult, as necessary, with such specialists as internists, hematologists, urologists, and general surgeons. The services of a gynecologic oncologist are recommended when a malignant tumor is suspected and when the special expertise of such an individual is required.

Usually, when the patient is admitted to the hospital for her operation, the preoperative history and physical examination are carried out by a house officer. When there are no house officers, the attending physician performs these functions. It is advisable that on the day of admission the gynecologist review again the history and physical examination as well as the preoperative diagnostic studies as a final precaution.

## SPECIAL PREOPERATIVE CONSIDERATIONS

**Eradication of Infection.** In patients with urinary or genital tract infections, elective operations should be postponed until these areas show no growth by culture, or until local areas of inflammation in the vagina have been healed.

**Correction of Anemia.** Before elective procedures, simple iron deficiency anemias may be corrected by the use of iron and other hematinic agents. In more urgent situations, transfusions of whole blood or packed red blood cells may have to be used preoperatively to return the hematocrit to acceptable levels. In patients with severe menorrhagia causing the anemia, hormonal therapy may be utilized to control the bleeding while bringing the blood count to acceptable levels.

**Bowel Preparation.** When there is a possibility that the bowel may be involved in the pathologic process, bowel preparation is recommended. This is generally

accomplished by mechanical cleansing with cathartics and enemas, a liquid diet, and 0.5 g of neomycin sulfate and 0.5 g of erythromycin given orally every 6 hours for 48 hours prior to operation.

**Prophylactic Antibiotics.** Premenopausal women undergoing vaginal hysterectomy experience a significant febrile morbidity. Several studies have demonstrated that the administration of prophylactic antibiotic reduces this morbidity. The use of such antibiotics given initially one hour prior to surgery, then every 6 hours for three doses, provides a high antibiotic level in the local tissues at the time of the operation and immediately after and prevents the development of infection with resistant organisms. For such procedures as abdominal hysterectomy and cesarean section, prophylactic antibiotics are effective and are recommended as for vaginal hysterectomy.

**Prophylactic Anticoagulation.** In patients with a history of deep vein thrombosis or a history of pulmonary embolism, low-dose prophylactic heparin should be considered. In obese women and those with varicosities, this approach should also be considered. The usual dose of heparin is 5,000 U every 12 hours, either intermittently subcutaneously or continuously intravenously.

**Monitoring Lines.** An intravenous line is generally placed prior to the induction of anesthesia for just about any procedure, minor or major. When more extensive procedures are contemplated, or if the patient is at high risk for excessive bleeding or has cardiovascular or respiratory problems, a central venous pressure line should be placed, preferably into the subclavian vein or into the external jugular vein. In addition, many anesthesiologists utilize peripheral arterial lines for monitoring of blood pressure and pulse rates and to have an access site for arterial blood gas determinations.

**Available Blood.** Blood should always be taken for typing and crossmatching.

**Scrubs and Shaves.** The shaving of abdominal and perineal hair, especially the night before operation, has recently come into question. There is evidence to show

that this may create a greater potential for infection of the operative site than if the shaving is done immediately before making the incision. Generally speaking, there is no need to shave the lower abdomen or vulva in order to perform minor gynecologic procedures. Many people do not shave these areas even for major vaginal surgery. If patients are obese or when extensive procedures are contemplated, scrubbing of the areas for several days with an antiseptic solution helps to reduce the potential for postoperative infection. In addition, the use of the usual scrubbing technique on the abdomen and in the vagina also helps mechanically to reduce the bacterial content of those areas and again reduces the possibility of infection.

**Enemas.** Cleaning of the lower bowel with enemas prior to operation helps to reduce intestinal distention and allows better abdominal surgical exposure. With vaginal procedures, this cleansing reduces the risk of contamination of the operative field.

**Anesthesiologist's Evaluation.** The anesthesiologist should see the patient, preferably the day before the operation, to determine the type of anesthetic that is best suited for her and for the surgical procedure. The anesthesiologist should also obtain an informed consent regarding the anesthesia, acquaint the patient with what will be done, and provide the emotional support that the patient will need at the time of induction of anesthesia.

Although the exact specifics vary from gynecologist to gynecologist and from institution to institution, the general principles outlined in the preoperative evaluation of the patient from the time of her initial visit to the time of the operation are essentially the same. Meticulous attention to adequate diagnosis and diagnostic procedures, providing the patient with adequate choices and information, carefully assessing the patient's general status, and finally carrying out procedures that are most advantageous to the patient are the goals of the preoperative care of the gynecologic patient.

# PREOPERATIVE MEDICAL CONCERNS

TAWFIK H. RIZKALLAH, M.D.

In our world of subspecialization, it is easy for a physician to lose track of the traditional ways of caring for surgical patients. Because the surgeon's responsibility encompasses the preoperative, operative, and postoperative periods, preoperative consultation with an internist, cardiologist, nephrologist, anesthesiologist, and others may be essential in the management of a patient with medical disorders that require special attention prior to surgery. When emergent conditions are superimposed on surgically treatable gynecologic disorders, one has to weigh the risk of operating on a critically ill patient without stabilizing her medical problems and the consequence of an increased mortality rate against the risk of deferring surgery long enough to stabilize underlying medical conditions while allowing the underlying disease to progress and make the situation more desperate.

It is imperative that the surgeon have a good understanding of the medical status of his patient, that he consult with appropriate specialists, and that he allow them to share with him the responsibility for treating the patient.

## CARDIAC DISEASE

Preoperative studies performed on patients about to undergo noncardiac surgery have shown that a prior myocardial infarction (MI) had occurred in 1.3 percent of patients over 30 years of age and in 10 percent of patients over 40 years of age. Surgery performed on patients with previous MI carries the risk of an increase in mortality rate. Therefore, preoperative assessment of cardiovascular function allows the physician to estimate the potential risk of surgery for the patient. For a patient at high risk, the cardiologist must determine whether she can withstand the surgery. Invasive procedures may be indicated prior to surgery to evaluate the cardiac status.

### Anesthesia for Cardiac Patients

As the type of anesthesia selected is crucial, a consultation with an anesthesiologist is necessary. Previous studies have shown that neither epidural nor spinal anesthesia is preferable over general anesthesia, and that all carry the same degree of risk to cardiac patients. The overall mortality rate, incidence of postoperative myocardial infarction, arrhythmias, and other cardiac morbidity are not affected by variation in anesthetic agents or techniques. Spinal or epidural anesthesia can lead to hypotension as a result of sympathetic blocking, and this effect is not so readily reversible as in inhalation anesthesia.

Local anesthesia is not without substantial hazard, since drugs used for this purpose are absorbed systemically and may produce considerable myocardial depression when used in large amounts.

## Risks

The risk of postoperative myocardial infarction, and its high mortality rate, is greater for patients whose underlying cardiac disease is of sufficient magnitude to be identified by history and physical examination prior to surgery. Previous investigation has shown that the incidence of postoperative myocardial infarction is approximately 6 percent in a group of patients without cardiac disease.

**Noncardiac Risk Factors.** Unquestionably, emergency operations and poor health before surgery place the patient at high risk. In patients with disorders leading to biochemical changes manifested by gaseous or electrolyte disorders, e.g.,  $PO_2$  less than 60,  $PCO_2$  greater than 50, potassium less than 3 mEq per liter, or carbonate less than 20 mEq per liter, blood urea nitrogen greater than 50 mg per deciliter, or creatinine with greater than 3 mg per deciliter, abnormal SGOT, signs of chronic liver disease, or bedridden patients with noncardiac disease, the risk of developing cardiac complications, even of death, increases three- to four-fold. Preoperative lung disease is an especially important consideration as hypoxia and ventilation disorders are common.

**Cardiac Risk Factors.** According to the literature, the risk of recurrent myocardial infarction if surgery is performed within 6 months of a previous myocardial infarction is in the range of 20 percent. That risk decreases as the interval after the previous infarction lengthens, stabilizing at approximately 5 percent after the first 6 months. Mortality among patients with a previous myocardial infarction who have a recurrence after surgery is over 50 percent. One has to be aware that myocardial infarction without chest pain (silent MI) may occur postoperatively. If looked for, these silent postoperative myocardial infarctions may be found in over half of these patients and, more likely, in elderly patients (discounting the fact that fewer infarctions may have occurred during the interoperative period.)

## Valve Disorders

**Aortic Stenosis.** These patients are not at risk for postoperative myocardial infarction, pulmonary edema, or ventricular tachycardia, but they have an eight-fold increased risk of cardiac death.

**Mitral Stenosis.** A patient with mitral stenosis has no significant increased risk of developing postoperative myocardial infarction or cardiac death. However, the presence of mitral regurgitation murmur (grades 2 to 6 or louder) is associated with a nine-fold increased risk of postoperative myocardial infarction and three times greater risk of cardiac death. In general, surgery is



tolerated in patients with mitral valve disease, but not in patients with aortic valvular lesions.

**Hypertension.** Patients with systolic blood pressure above 200 mm Hg who undergo intra-abdominal surgery fare poorly, and surprisingly, patients with systolic blood pressure below 100 mm Hg also fare poorly. The risk of stroke is three times higher in patients with a systolic blood pressure over 180 mm Hg than in those with a pressure around 130. As for the diastolic blood pressure, studies have shown that it is safer to operate on patients with a diastolic blood pressure below 110 mm Hg. These patients should be treated aggressively postoperatively if the diastolic blood pressure was 110 or more during surgery.

**Angina Pectoris.** It is not clear whether or not this is a risk factor. Patients with angina pectoris may not be denied surgery, but should be watched carefully and given appropriate medication immediately in the postoperative period.

### Recommendations

#### *Known or Suspected Coronary Artery Disease*

Patients without known coronary artery disease require standard care for anesthesia in the type of surgery undertaken. Patients with controlled hypertension who do not have cardiac disease also require standard care. However, patients with unstable angina need close management and postponement of elective surgery. Excessive anxiety can be treated with sedatives and nitroglycerine.

In patients with a myocardial infarction more than 6 months old, the risk of recurrent perioperative myocardial infarction is about 5 percent. Therefore, the patient should be monitored closely, perhaps with a Swan-Ganz catheter. Surgery should be postponed in patients who have had a myocardial infarction within the previous 6 months. Meanwhile, the patient who has had a recent myocardial infarction and has to undergo surgery must be evaluated and the benefits of surgery weighed against the high associated surgical mortality. Undoubtedly, intensive postoperative care should be provided in a unit equivalent to the medical coronary care unit. Continuous electrocardiographic monitoring is the rule during and after operation in the surgical intensive care unit so that acute ischemic events or infarction can be detected and treated aggressively before more complications arise. If the patient has been taking propranolol preoperatively, the medication should be resumed immediately postoperatively to protect the heart from sympathetic stimulation and to avoid acute ischemic events associated with propranolol withdrawal.

#### *Congestive Heart Failure*

Patients with class I or II heart disease (New York Heart Association functional classification) do not have a significantly increased risk of developing postoperative heart failure following anesthesia and noncardiac surgery. Those with class III or IV heart disease are at increased risk of developing postoperative complications. To reduce

this risk, it is imperative to reverse congestive heart failure and improve cardiac performance preoperatively by means of digitalis, diuretics, and vasodilators.

#### *Arrhythmias*

Patients with arrhythmias are at high risk for cardiac morbidity and mortality, even in the absence of a previously known heart disease. Therefore, the factors leading to the arrhythmias, especially premature ventricular beats and other types of potentially dangerous ventricular extrasystoles, should be recognized and treated prior to surgery. This is usually done by intravenous lidocaine, a 50- to 100-mg bolus, followed by continuous infusion of 1 to 4 mg per minute; maintenance infusion is continued intraoperatively and postoperatively when necessary. It is also recommended that digitalis be given preoperatively when ventricular or atrial premature beats occur. The anesthesiologist may resort to using calcium blockers during surgery when indicated.

Sinus bradycardia, on the other hand, may be due to reversible factors, for example, overdigitalization or hypothyroidism. These factors have to be determined preoperatively and treated until the heart rate returns to normal. These patients have to be evaluated by a cardiologist prior to surgery, and the heart has to be challenged to determine whether this arrhythmia is a simple sinus bradycardia or is due to a sick sinus syndrome. The latter may be treated by a temporary or permanent pacemaker.

#### *Patient with Permanent Pacemaker*

The type and the condition of the pacemaker should be known preoperatively, and the pattern by which it functions, either properly or improperly, should be ascertained prior to surgery. The principal danger to the pacemaker during surgery is direct electromagnetic interference caused by the use of electrocautery during surgery, thus creating inhibition of the pacemaker. This problem is magnified when the cautery is used within 12 inches of the pacemaker.

### PULMONARY DISEASE

Anesthesia and surgery, especially upper abdominal surgery, are among the major risk factors leading to pulmonary complications such as atelectasis, pneumonia, pulmonary embolism, and respiratory insufficiency. Other risk factors are advancing age, smoking, morbid obesity, malnutrition, altered mental status, neuromuscular dysfunction, chronic productive cough, asthma, heart disease if accompanied by heart failure, and prolonged and extensive surgery. A patient who is at high risk of developing pulmonary complications can be identified by a detailed history and a complete physical examination. Preoperative testing, both routine and specialized (e.g., bedside spirometry), may identify a patient who will need prolonged intubation and postoperative mechanical ventilatory assistance. A preoperative consultation with an anesthesiologist and/or a pulmonary physiologist may be necessary to plan the pre- and postoperative care of a patient who is at high risk of developing pulmonary complications.