

Non-Obstetric Surgery During Pregnancy

A Comprehensive Guide

Ceana H. Nezhat *Editor*

Michael S. Kavic

Raymond J. Lanzafame

Michael K. Lindsay

Travis M. Polk *Associate Editors*

 Springer

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*To the mother and twins whose story planted the first seed
of this project years ago and to all mothers and infants
worldwide, past, present, and future.*

Foreword I

“She’s Pregnant”

No two words create more doubt, angst, and heartburn for a surgical consultant.

Every surgeon has been there. After hearing about a case from an ER doctor or a trainee and formulating a mental model and plan, the conversation closes with “by the way, she’s pregnant.”

Suddenly a twinge, perhaps a jolt, or maybe even a cold sweat ensues. The consultant surgeon’s mind kicks into overdrive churn. The clinical problem and solution, previously obvious, is now in question! There is an agonizing reappraisal. Do the fundamental principles of care for a general surgical or specialty surgical problem remain valid, or do they “go out the window”? Now every intervention holds the possibility of a 200% morbidity or 200% mortality.

While concurrent surgical disease arises infrequently during pregnancy, pregnancy is common. Thus, this is a nontrivial problem, usually arising at the worst possible time.

“What to Do?”

Enter Nezhat’s volume *Non-obstetric Surgery During Pregnancy: A Comprehensive Guide*. More than just a “how to do cookbook” this book provides a rational framework of thinking about the health of both the fetus and the pregnant mother. Dr. Nezhat brings three decades of deep experience and expertise in obstetrics and gynecology to us all in this superb book. Cerna is recognized as a leading authority and he does not disappoint.

In crisp clean sequence, the fundamental groundwork is laid; preferred imaging strategies, anesthesia considerations, and OR setup are wonderfully outlined. Subsequent sections target general surgical and specialty surgical conditions often arising during pregnancy. Each, in turn, is methodically covered. Treatment options, risks, and benefits are all carefully and thoroughly described. Finally, gynecological conditions, obstetric complications, and in utero operative approaches to spinal bifida round out this exceptional book.

Forearmed with the knowledge gained from this book, the general surgeon or the specialty surgeon will no longer quake when they hear the words, “She’s pregnant!”

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Foreword II

I congratulate Dr. Ceana H. Nezhat and his associate editors Drs. Michael S.Kavic, Raymond J. Lanzafame, Michael K. Lindsay, and Travis M. Polk on highlighting the much ignored topic of non-obstetrical surgery during pregnancy. In addition to the surgical procedures themselves, it is imperative the surgeon is knowledgeable about the pathophysiology of pregnancy and its impact on both the mother and fetus. Hypertension and diabetes during pregnancy can result in increased morbidity and mortality when compared to women who are not pregnant. A 50% increase in blood volume, as well as changes in renal function, can impact the procedures being performed. This book provides the reader with an in-depth knowledge of surgical procedures and anesthesia challenges in the gravid patient. Procedures reviewed range from establishing a pneumoperitoneum in pregnancy to exploratory laparotomy.

Abdominal surgery is presently the most common surgical procedure for the pregnant patient. Unfortunately, even if done by the most experienced surgeon, the procedure can result in a miscarriage and loss of pregnancy. The authors recommend surgical procedures be delayed when possible and elective procedures avoided until completion of the pregnancy. However, there are many conditions that require emergent surgery, such as appendicitis. The authors have provided their readers with a road map to perform these procedures. The ultimate goal is to protect both the mother and the unborn fetus.

This book provides an evaluative review of the surgical management of urgent and emergent procedures during pregnancy as well as a thorough analysis of gynecologic surgery and the surgical management of obstetrical complications. This comprehensive guide is a must-read not only for obstetrician gynecologists but also for any clinician involved in the management of a pregnant patient.

Dr. Nezhat has brought together both national and international experts to contribute their years of experience for this book. It is through knowledge we will be able to decrease the unacceptable morbidity and mortality of the pregnant and postpartum patient observed throughout the world today.

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Preface

Non-obstetrics Surgery During Pregnancy: A Comprehensive Guide was conceptualized from an identified gap in education and fills a major void as one of a few texts which provides a comprehensive evidence-based approach to the management of major non-obstetric surgical procedures. Surgery for non-obstetric causes during pregnancy is not uncommon and a timely topic. The book is written in “cookbook style” and geared towards most specialties. It is my intention that this book provides a compendium that will assist clinicians by guiding their management of pregnant patients and hopefully improving outcomes for both mother and baby.

The text flows logically with introductory chapters, such as history of laparoscopy, instrumentation, room setup, and patient positioning, laying the groundwork for performing non-obstetric surgery in a pregnant patient. Moreover, there will be individual chapters covering various specialties and detailing surgical complications that may arise specific to each field. The book concludes with an overview of various obstetrics-related complications that require surgical management. I trust the readers will find this to be a useful, well-rounded, and educative resource.

Ideally, every child is “well-born,” physically, mentally, and emotionally which is fundamental to human dignity. The contributors to this book represent the vanguard in their respective specialties. They highlight critical factors for consideration while caring for the pregnant woman and her unborn child, aspiring to build human dignity one birth at a time. I greatly appreciate the editorial assistance/review provided by my associate editors whose extensive experience in varying disciplines brought expert-level evaluation to the review process. Special thanks to Ms. Sarah Kyle McClellan, MPH, who contributed greatly to the review process and preparation of the book. We are very proud of the depth of information we are providing to our readers owing to the knowledge and experience of our contributors.

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Introduction

As I reflect upon the days when I delivered babies, I recall hearing the much-awaited cry of the newborn filling the room with joy and a sense of relief. It was one of the most rewarding moments of my career. Months of caring for both mother and her unborn child had finally come to fruition. During my last call as a chief resident in obstetrics, I was called on a code for an antepartum mother in cardiac arrest around 30 weeks twin gestation in preterm labor on tocolysis. When I arrived, Emergency Medical Services (EMS) announced unsuccessful resuscitation attempts on the mother. I proceeded with emergency bedside cesarean delivery of the twins in seconds. Following delivery, the mother responded to resuscitation and all survived. What I did not know at the time was this event would stay with me throughout my career and one day blossom into the idea for a comprehensive guide on maternal obstetric and non-obstetric complications for all physicians caring for a pregnant mother.

Obstetrics is a multifaceted specialty relating closely to other branches in medicine. Since pregnant and nonpregnant women are subject to the same diseases, physicians must be well versed with surrounding various ailments. Extensive knowledge of pregnancy physiology and pathophysiology of obstetric disorders must then be applied, improving perinatal outcome.

Fetal and infant safety and survival have taken priority over maternal health and well-being during pregnancy. Neonatal wards today are staffed by highly trained specialists who are ready for the worst in regard to infants, while mothers are tended to by nurses and doctors who expect the best and are unprepared when complications arise. Research has shown that pregnant women who undergo non-obstetric surgery have a higher risk of postoperative septicemia, pneumonia, and urinary tract infections (UTIs). They are also at an approximate fourfold higher risk of in-hospital mortality following non-obstetric surgery compared with nonpregnant patients [1]. The lack of education provided to doctors, nurses, and other health care professionals regarding maternal health in pregnancy demonstrates the absence of risk the modern world associates with childbearing.

Historically, pregnancy has been a time of joy and apprehension. During the Renaissance, women would write out their wills as soon as they became pregnant [2]. History is, in fact, full of maternal death. Thomas Jefferson lost his wife after childbirth in 1782. Princess Charlotte of Wales, granddaughter of King George III and cousin to Queen Victoria, died after giving birth to a stillborn in 1817. Charlotte Bronte died of hyperemesis gravidarum in 1855.