
Acute Abdomen During Pregnancy

Goran Augustin

Acute Abdomen During Pregnancy

Second Edition



WORLD SOCIETY OF
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To my father, an abdominal surgeon, whose ability to make an accurate diagnosis in emergency abdominal surgery only with history taking and physical examination was never outperformed. He taught me great things in this “clinical magic”

To my wife Katarina, who despite having two small children, understood the importance of this work to me and sacrificed almost a decade of many weekends, evenings, nights, and journeys to allow me and provide me enough time to create both the first and the second edition of this book

To my children (Lara and Lukas)... who remind me every day that teaching others is a great opportunity and pleasure that cannot be substituted

To my mother, whose mathematically functioning brain is fascinating, and now I realize that it is a fortune that I inherited most parts of it

And... to all pregnant women... who are healthy... and to all who need the clinicians' consultations from this book, whose lives and lives of their future babies will be saved and normal....

Foreword I

Diagnosis and treatment of surgical abdominal emergencies during pregnancy is challenging. Abdominal examination is difficult and organs may be pushed by the uterus in relation to gestational age, therefore obscuring abdominal pathologies. Physiological parameters are altered due to pregnancy-induced changes and laboratory tests could be deranged due to pregnancy-induced variations. In evaluating abdominal emergencies in the gravid women, the physician is advised to cautiously use tomography for diagnosis. Radiation exposure may affect the normal development of the fetus. Indeed a perplexing clinical setup.

Delay in the diagnosis of surgical emergencies is associated with amplified risk to the mother and the fetus. The need for nonobstetrical surgery during pregnancy is low. However nonobstetric surgery is fraught with increased risk to the fetus. Fortunately, in most cases, the gravid woman is a young and healthy individual and surgical emergencies are, therefore, confined to the young group of patients. The gestational risk in pregnant women with an acute abdomen is multifactorial. Some relate to the patient itself and her well-being and some relate to the fetal age of gestation at the time of diagnosis. Peritonitis and sepsis contribute to the risks, and surgical approach (laparoscopic vs. open) has a great deal of impact.

Dr. Goran Augustin has assembled data on surgical emergencies in the pregnant women and wisely outlined recommendations for the practicing surgeon faced with a gravid patient endangered with an abdominal surgical emergency.

Any surgery during pregnancy confers significant obstetrical risk. Delayed investigation and diagnosis may lead to worse outcomes for the patient and her fetus. Surgeons should be aware of pregnancy physiology and the precise algorithm for diagnosis and management during gestation. This book offers exactly that.

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Foreword II

I have been invested with the honor (and responsibility) of writing a “FORE” “WORD” meaning to write thoughtful comments made about a book, to give the impression as to what this book is all about. Acute abdomen during pregnancy is a dramatic event, with significant morbidity and mortality for both mother and fetus. Despite this, acute abdomen during pregnancy does remain a neglected and not well-known topic.

Clearly, a pregnant patient presenting with an acute abdomen is a clinical scenario that overlaps specialties. Common sense suggests the early involvement of a bunch of specialists such as a surgeon, obstetrician/gynecologist, and a specialist in maternal-fetal medicine when dealing with this challenging situation.

Unfortunately, the diagnosis and treatment often tend to be delayed due to the peculiar physiological features of pregnancy and the restrictions imposed on diagnostic imaging techniques such as X-ray and CT, due to the fear of radiation exposure. MRI is gaining an increasingly relevant role in the diagnostic workup but is not always and everywhere available or easily and readily accessible. Nevertheless, acute abdomen has the need to be diagnosed in the shortest time possible and promptly treated. Physicians should pay attention in this regard as any delay may seriously deteriorate the condition of both mother and fetus.

The editor, Dr. Goran Augustin, is an internationally recognized expert in the field of acute abdomen during pregnancy, and given his research and clinical activity from the last decade, I can wholeheartedly state that he is now considered an internationally recognized expert in the management of acute appendicitis and other acute surgical diseases in pregnant patients. His dedication to this critical subset of patients has to be commended, and Dr. Augustin has made this delicate issue to become his own area of clinical practice and his field of scientific research throughout the years. Textbooks and surgical journals are appearing to be the written resource of the fundamentals and the research reporting archives of the knowledge and the craft of this surgical discipline. This textbook is one of those resources and represents a landmark textbook in the field of the care of the pregnant patient. Both the trainee and the practitioner of acute care surgery but also gynecology and obstetrics as well as emergency physicians and family doctors will find this textbook useful and a ready resource for current approaches to surgical emergencies.

This will soon be a standard text used by surgeons who practice Acute Care Surgery around the world and any physician dealing with a critical surgical care during pregnancy, and it has been a privilege to review it.

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Preface to the Second Edition

He who combines the knowledge of physiology and surgery, in addition to the artistic side of his subject, reaches the highest ideal in medicine.

Christian Albert Theodor Billroth

I am fortunate again to have the opportunity of changing my mind, of clarifying confusion and my confused thinking, and of correcting misstatements, as well as attempting to remain contemporary. I am doomed to the embarrassment of living with my previous inaccuracies. Still, it is better to recant than to be accused of having a pertinacious little mind.

Marvin Corman

(Preface to the sixth edition of *Colon and Rectal Surgery*)

If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties.

Sir Francis Bacon

When I started writing the first edition of this book, I read the foreword of one book, from an author whom I do not remember, where he wrote that he did not know that it was more difficult and more time consuming to write the second edition of the same book. At first, I was surprised because I thought that one can change several figures and add a little new text, and the new edition is completed. When I started to improve the first edition, I recalled the author's words and his statement. It is the whole truth! I was surprised when, several months after the first edition was published, I started to read again my book. I was surprised how many misinterpretations, errors, or scientific and clinical "gaps" were present. I was ashamed how incomplete and inconsistent the book I wrote was. At the same time, I started to read the new, sixth edition of Marvin Corman's book – *Colon and Rectal Surgery*. Before going to the specific topics that interested me, I read the preface. And I was thrilled, relaxed, satisfied, and fulfilled at the same time. The citation that I took from Corman's *preface* is true. Then, it was easier to finish this second edition knowing the fact that it will be better than the first edition (and probably worse than future editions). Every chapter is expanded and updated, and four new chapters are added. The chapter on urologic emergencies helps to differentiate conditions that usually do not require operative interventions. Perioperative and anesthetic considerations, which were the part of every chapter in the first edition, are concentrated in a separate chapter and significantly expanded. Many of these considerations are the same for most acute abdominal conditions during pregnancy. One of the added chapters is especially interesting. It is about increased intra-abdominal pressure during

pregnancy. This issue is complex even in the general population, and in pregnancy, it has additional difficulty during the diagnostic workup and also with the selection of appropriate treatment strategy for both the mother and the fetus.

My father, who was also an abdominal surgeon, watched me while writing the second edition, for 2 years, day by day. Once, he came to me, knowing that I am the sole editor and author, and said: “This book is concentrated energy, so much energy that could fill an atomic bomb.” Now, when the text is finished, I can confirm that his statement is true. Concentrated energy or concentrated knowledge is what I want to share with every reader!

And now, I repeat my plea from the preface of the first edition: contact me about any type of errors, misinterpretations, and any medical/surgical mistakes in the text because I would like to improve (further editions of) this interesting subject. Dear authors, publish cases of the acute abdomen during pregnancy, and publish comprehensive reviews, so the medical community could have a better insight into the incidence, etiology, diagnosis, treatment, and maternal and fetal outcome for all causes of the acute abdomen during pregnancy. Dear reviewers and editors of medical journals, please have a sensibility for these important topics. Who knows, maybe, one day, a journal, for example, *Journal of Abdominal Surgery in Pregnancy* or *Digestive Diseases in Pregnancy*, will be created.

Zagreb, Croatia

Goran Augustin

Preface to the First Edition

The art and science of asking questions is the source of all knowledge.

Thomas Berger

What has given me the most joy in my life is the establishment of a school that carries on my aspirations and aims, be it scientific or humanitarian thereby ensuring a legacy for the future.

Theodor Billroth, 1893

Earlier diagnosis means better prognosis.

Zachary Cope, 1921

How did the idea for the book come? Here is the answer. Acute abdomen is still one of the most exciting conditions in (emergency) surgery and medicine in general. The clinician needs to make the diagnosis and the indication for the operation as fast as possible, and then the operator should perform the operation with the lowest possible morbidity and mortality. This is known for over a century. An additional difficulty arises when that clinician has a pregnant patient with acute abdomen. Now he or she is dealing with two human beings at the same time. Also, the pregnant patient has slightly changed intra-peritoneal anatomy and physiology, making the diagnosis more difficult.

During the last 7 years, I started to study more about cases of the acute abdomen during pregnancy. Searching through the literature, I found very little reviews on the subject. Unfortunately, that was expected because acute abdomen during pregnancy is a rare group of conditions. If one excludes the most common causes such as acute appendicitis and acute cholecystitis, the clinician can deal with only one pregnant patient having acute abdomen in several years, sometimes once in a career. When I comprehended that, I started to study, write, and publish articles about different topics of the acute abdomen during pregnancy. When I tried to find some texts covering the whole topic, I could not find these. Then, it came to me that I need to write a book about *acute abdomen during pregnancy*, first to help myself and then to help all the clinicians dealing with this rare subject. It is interesting that some names in medicine, gynecology, and surgery who are not so famous or known were the first to treat such cases in medical history. It was interesting for me to read about them and to put them in the book. Mostly, these persons were more famous for other achievements in their medical fields.

There are two problems in writing a book that should have guidelines and recommendations on the topics included. First, it is the (extreme) rarity of these diseases. Second, it is the acute onset that is unpredictable in its severity

and time of presentation. Both these facts preclude the possibility for randomized studies that are needed for validated guidelines and recommendations in medicine. Therefore, some of the recommendations in the book are not adequately validated, but due to the rarity (some diseases have less than 50–100 cases published in 100 years), I tried to combine the recommendations from acute abdomen in the general population and from the opinions of the authors (and myself) of published case reports. Thus, many facts from these case reports are copied into this textbook. Also, the comprehensiveness of the chapters is not equal and mostly depends on the frequency of a specific condition during pregnancy. Hence, the most extensive chapters include acute appendicitis and acute cholecystitis, the conditions which present most of the cases of the acute abdomen during pregnancy. I tried to include as much as possible case reports, so the reader can have his or her own opinion about the topic and also can develop ideas for further research on the subject. After completing the manuscript, I read it thoroughly, and then I realized that there are many things that could be written better. What motivated me to go further is Margaret Atwood's tip for writers: "If I waited for perfection, I would never write a word." Therefore, if I waited for perfection, I would never write this book.

Additionally, it should be mentioned that possibly any cause of acute abdomen can occur during pregnancy and a detailed description would lead to an enormous number of unnecessary pages; therefore, in conditions that have only one or several cases published, a short description of the disease is presented. It is difficult to say if this book is more suitable for the gynecologist or general/abdominal surgeon. Some parts will be more interesting to the surgeon, while others more to the gynecologist, especially therapeutic considerations. The diagnostic workup will be interesting to every reader. Some photos (figures) in the text are not of the excellent quality, but because of the extreme rarity of some conditions, it is impossible to obtain other figures of similar or same pathology.

And my final plea... to every reader... please contact me about any type of errors, misinterpretations, and any medical/surgical mistake in the text because it would improve (further editions of) this interesting subject. Contact me if you have any questions about the subject. Also, any reader dealing with this subject could feel free to contact me to be an author of one of the chapters in (possible) further editions of this book. My other plea to the reader is to publish cases of the acute abdomen during pregnancy so the medical community could have a better insight into the incidence, etiology, diagnosis, treatment, and maternal and fetal outcome for all causes of the acute abdomen during pregnancy.

I hope that the reader will enjoy reading the book as much as I enjoyed creating it!

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