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# Emergency Imaging of Pregnant Patients

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Editors

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 Springer

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*To my parents Ludmila and Natan Patlas for their love,  
support, and encouragement.*

Michael N. Patlas

*To all the mothers in my family who gave me life in many  
ways: my mother Karen, my grandma Bobby, my wife  
Darienne, and my mother-in-law Maria Elena aka Mimi and  
Abu. Let this book be helpful to the imaging and clinical care  
of current and future mothers.*

Douglas S. Katz

*This book is dedicated to Titina Mia, with endless love ...*

Mariano Scaglione

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## Foreword

It is broadly understood that optimal patient care is rarely one-size-fits-all, but must rather be tailored to the unique needs of the patient. This is a daily truth to practitioners of emergency imaging, a field in which diagnostic decisions and exam performance must be optimized to the specific patient's presentation and physical characteristics.

Pregnant patients pose unique challenges to those participating in their emergent care needs. Care teams must consider the diagnostic and therapeutic needs not only of the mother, but of her unborn child as well. Presenting signs and symptoms may be modified, masked, or accentuated. Differential diagnostic considerations fluctuate in their likelihoods over the course of the pregnancy. Risk–benefit considerations of imaging may be altered by unique concerns about ionizing radiation exposure or intravenous contrast agents. Physiologic changes of pregnancy introduce specific challenges to optimal image acquisition and may impose diagnostic limitations unique to this population. All of these factors impact decisions about how best to image and to diagnose these women and their unborn children.

Our imaging technologies and understanding of how best to personalize imaging decisions have evolved tremendously in the past decade. For example, following heightened concerns about ionizing radiation exposure in the mid-2000s, the CT manufacturers responded by developing many new tools to enable high-quality imaging at progressively lower radiation doses. Many physician-scientists have studied methods to best implement these and preexisting dose reduction techniques into routine clinical practice. As a result, optimally planned examinations can now be performed at substantially lower radiation doses than was previously possible, potentially reducing concerns about clinically indicated modest levels of ionizing radiation during pregnancy.

In *Emergency Imaging of Pregnant Patients*, Drs. Patlas, Katz, Scaglione, and colleagues explore these and other key considerations in this unique patient population. They highlight the relevant merits and limitations of CT, ultrasound, and MRI and delineate special clinical considerations organized

by body region and the nature of the emergency. Ultimately, the first priority of imaging pregnant patients must be to optimally care for the mother. This book provides a roadmap to do so and will help practitioners make thoughtful, patient-centered care decisions for expectant mothers and their unborn children.

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