Radiology of Iatrogenic Disorders

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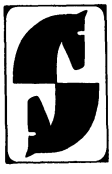

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Contents

Dedicated to our wives
Bea and Zohreh
for their love, patience, and encouragement,
and to our children
Richard and Amy Meyers
Lilly and Susan Ghahremani

Series Editor's Foreword

The purpose of this series of volumes is to present a comprehensive view of the complications that result from the use of acceptable diagnostic and therapeutic procedures. Individual volumes will deal with iatrogenic complications involving (1) the alimentary system, (2) the urinary system, (3) the respiratory and cardiac systems, (4) the skeletal system and (5) the pediatric patient.

The term *iatrogenic*, derived from two Greek words, means physician-induced. Originally, it applied only to psychiatric disorders generated in the patient by autosuggestion, based on misinterpretation of the doctor's attitude and comments. As clinically used, it now pertains to the inadvertent side-effects and complications created in the course of diagnosis and treatment. The classic categories of disease have included: (1) congenital and developmental, (2) traumatic, (3) infectious and inflammatory, (4) metabolic, (5) neoplastic, and (6) degenerative. To these must be added, however, iatrogenic disorders—a major, although generally unacknowledged, source of illness. While great advances in medical care in both diagnosis and therapy have been accomplished in the past few decades, many are at times associated with certain side-effects and risks which may result in distress equal to or greater than the basic condition. Iatrogenic complications, which may be referred to as "diseases of medical progress," have become a new dimension in the causation of human disease.

A highly accurate index of the overall incidence of iatrogenic illnesses is difficult to establish, but there is little doubt that it approaches epidemic proportions in certain instances. The literature indicates that paramount causes include drugs and hospital-associated risks:

- Every year in the United States, up to one and a half million people—between 3 and 5 percent of all hospital admissions—are admitted primarily because of drug reactions. Once in the hospital, between 18 and 30 percent of all patients have a drug reaction. The length of their stay is about doubled as a result[1–3].
- In one study of a general medical unit over a twelve-month period, one-quarter of the 67 deaths in the unit were due to adverse drug reactions[3]. In acutely ill hospitalized patients, the drug-related death rate has been recently reported to be nearly one per thousand[4].
- Hospital-acquired infections occur in about one in 20 patients and there is approximately 25 percent excess mortality among patients with nosocomial bloodstream infections. About one-third of all infections seen in hospital practice are nosocomial in origin[5]. The incidence of postoperative wound infections is about 7.4 percent[6].
- It has been reported that one out of every five patients admitted to the medical service of a typical university teaching hospital suffers an iatrogenic episode, which is classified as moderate or severe in 40 percent. Over one-fourth of the episodes result from diagnostic and therapeutic procedures[7].
- Of all patients admitted to a multidisciplinary intensive care unit in one recent study[8], over 12 percent were admitted because of iatrogenic disease. Potentially avoidable therapeutic and technical errors accounted for half of these; the remaining adverse reactions that were determined to be unpreventable represent the risk-benefit ratio of a treatment compared with the natural history of the illness. Furthermore, once in a medical-surgical intensive care unit, patients are subject to often harmful adverse occurrences[9].
- Ten percent of hospital deaths are associated with a diagnostic or therapeutic

procedure which is considered a contributing, precipitating or primary cause of obitus[10].

This series is not intended to support or encourage any concept of diagnostic or therapeutic nihilism. Rather, it is intended to assess and detail the broad spectrum of the mechanisms and effects of complications experienced in order to further refine clinical practice. Undue conservatism would effectively prohibit the meaningful application of any diagnostic or therapeutic method, virtually any of which carries a potential risk to the patient. Many inherent complications of medical and surgical techniques can be controlled only to an irreducible minimum, despite the exercise of utmost care and skill. In this series, areas of practical clinical concern are addressed rather than topics of pure academic interest. Radiologic documentation is often critical to uncover or confirm the presence and to evaluate the extent of many iatrogenic complications. The large number of illustrations used in each volume attest to the aim of fully employing the power of visual instruction.

Oscar Wilde's wry statement that "experience is the name men give to their mistakes" is beneficial only if physicians continue to be open-minded and to learn from each other. It is a medical axiom that advances introduce new problems which, in turn, generate solutions and further advances. Lewis Thomas[11] affirms that "Mistakes are at the very base of human thought . . . What is needed, for progress to be made, is the move based on the error." This series is designed in the hope that iatrogenic illnesses may be minimized, or appropriately anticipated and promptly recognized and managed, so that the prime injunction of clinical medicine can be further fulfilled: "Physician, do no harm."

Morton A. Meyers, M.D.

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Preface

Nearly four thousand years ago Hammurabi's code of practice not only made the payment for medical care dependent upon successful recovery of the patient, but worse yet, it imposed harsh reprisals for operative mishaps. This law of retribution for failure to cure fortunately was not enforced beyond a brief period in Babylonian history. Advancements in medicine have been based upon triumphs and oversights, both of which have contributed toward strengthening the foundation of our current knowledge. Just as D. H. Lawrence stated that the greatest secret of Victorian England was sex—in the sense that many more people were participating in it than openly discussing it—so it might be said that the understated effects of many advances in the diagnosis and treatment of digestive disorders are iatrogenic complications.

In this context, the present volume is aimed to review the broad spectrum of clinical gastrointestinal disorders caused by application of modern diagnostic and therapeutic methods. The purpose is not to emphasize dangers but rather to provide a perspective of the underlying mechanisms and clinical presentations of iatrogenic gastrointestinal complications. Guidelines and characteristic features are established which help in their anticipation, prompt recognition, and management. Every physician will do well by looking ahead for such often inevitable problems, and using the past experiences for guidance in their solution.

The first chapter includes a comprehensive review of drug-induced gastrointestinal disorders, probably the most common iatrogenic problem in medicine today. Voltaire had once stated that "A physician is one who pours drugs of which he knows little into a body of which he knows less." The text and references listed in the first chapter challenge that widely quoted opinion, clearly reflecting the depth of current medical knowledge on this subject.

Gastrointestinal endoscopy and intubation have become particularly valuable methods in the diagnosis and management of digestive disorders. Their widespread use has led to an increasing frequency of the complications described in Chapters 2 and 3. The iatrogenic problems associated with the performance of radiologic procedures are reviewed in detail in Chapter 4.

By far the largest portion of this book, Chapters 5 through 11, is devoted to the complications of surgery. The coverage of this subject, which carries significant morbidity and mortality, has been made relatively extensive for two reasons: to permit a review of postoperative anatomy which is a prerequisite for accurate diagnosis of abnormalities superimposed on the distorted gastrointestinal landmarks; and to detail a wide range of surgical complications even though some perhaps elude a clear definition in terms of being iatrogenic versus inherent risk of operation.

The final section in this volume, Chapter 12, deals with gastrointestinal sequelae of radiation therapy. Awareness of their pathophysiology and manifestations should become even more important in the future considering the apparent increase in the incidence of cancer and the number of patients treated with this modality.

Both the text and the accompanying illustrations emphasize the critical role of diagnostic imaging in the evaluation of iatrogenic gastrointestinal disorders. Their correct diagnosis and management depend upon close consultation between the clinician and radiologist.

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